

MANIT^{BA}

ANNUAL REPORT

1981 - 82

The Department of
Natural Resources



**DEPARTMENT OF NATURAL RESOURCES
ANNUAL REPORT, 1981/82**



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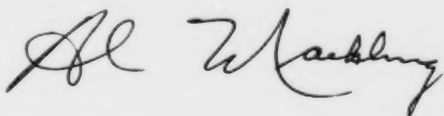
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To Her Honour
The Honourable Pearl McGonigal
Lieutenant Governor of the
Province of Manitoba

Your Honour

I have the honour to present to you the fifty-first annual report of the
Department of Natural Resources, recording the activities of the Department
for the fiscal year ending March 31, 1982.

A handwritten signature in dark ink, appearing to read 'Al Mackling'. The signature is fluid and cursive, with the first name 'Al' being more prominent and the last name 'Mackling' written in a continuous script.

Al Mackling
Minister



The Honourable Al Mackling
Minister, Department of Natural Resources

Sir:

I have the honour to present the annual report for the Department of Natural Resources for the fiscal year ending March 31, 1982. You will be aware that my predecessor J.D. McNairnay, was Deputy Minister of the Department during most of that time.

A number of items of special interest are briefly sketched below.

The Ecological Reserves Act was passed in the Manitoba Legislature in May, 1981. The four reserves in existence prior to the legislation had been established by Order-in-Council under The Crown Lands Act. The ecological reserves program had reached the stage where it was important that special legislation be enacted to preserve these key areas for posterity. A fifth reserve, Pocock Lake Ecological Reserve, was declared.

The Department continued to oppose any components of the Garrison Diversion Project that would divert Missouri River water into the Hudson Bay Watershed. As part of an organized program to inform the public of the significance of the Garrison Diversion Project to Manitobans, the Garrison Focus office was opened in the Legislative Buildings in March, 1982. The office will provide information to the public, keep abreast of activities in Washington and work closely with the Action Committee Against Garrison.

The Department continued its attack on Dutch Elm Disease throughout the province. Cost-sharing agreements for disease control were negotiated with 10 communities in the province for a total of nearly \$380,000. In October, the Department, with the co-operation of the Canadian Forestry Service sponsored an international workshop on Dutch Elm Disease. It was the largest symposium of its type ever held in North America.

A 20-year forest management plan for the province was completed. The plan will provide the basis for sound and responsible management of Manitoba's forest resources to the year 2000. Under the plan, the achievements of the forest industry will be assessed every five years.

A new fire suppression system called Helitac was initiated. Through the use of helicopters and special crews based at strategic locations, the Department's fire fighting capability has been greatly expanded.

In answer to the public need for winter outdoor recreation, a new winter sports area was opened in the Spruce Woods Provincial Park. The area includes a hockey rink, a skating trail and pond and four sheets of ice for jam-pail curling. The facilities will add greatly to the park as a year-round recreational area.

Also in Spruce Woods Provincial Park, a skiing and hiking trail was dedicated to the people of Newfoundland. Earlier in the year, the Province of Newfoundland had dedicated an amphitheatre in Newfoundland's Butter Pot Park to Manitobans. These actions are symbolic of the link between the two provinces.

Revenue from map sales increased in 1981/82 by 45% over the previous year. This was largely because of the establishment of map sales outlets in the Department's regional offices and an active maps sales promotion campaign. A series of newspaper articles were run in many rural Manitoba newspapers describing the Department's responsibility for establishing official place-names and outlined the history of many Manitoba place-names. The articles resulted in numerous requests for additional information from the public.

In May, a Flood Forecasting Agreement was signed between Manitoba and Canada under the Canada/Manitoba Flood Damage Reduction Program. The purpose of the agreement is to provide more effective flood forecasting along the Red, Assiniboine and Souris Rivers in Manitoba. A Flood Forecasting Centre was established and a pilot project has been initiated in the Boyne River Watershed.

Under the Subsidiary Agreement on Water Development for Regional Economic Expansion and Droughtproofing, the dam on Lake Minnewasta at Morden was raised to enhance water supplies for that community. More projects of a similar nature are planned for the future.

Over \$10 million was collected by this Department from Manitoba Hydro and Winnipeg Hydro for water power rentals, storage charges and land rentals.

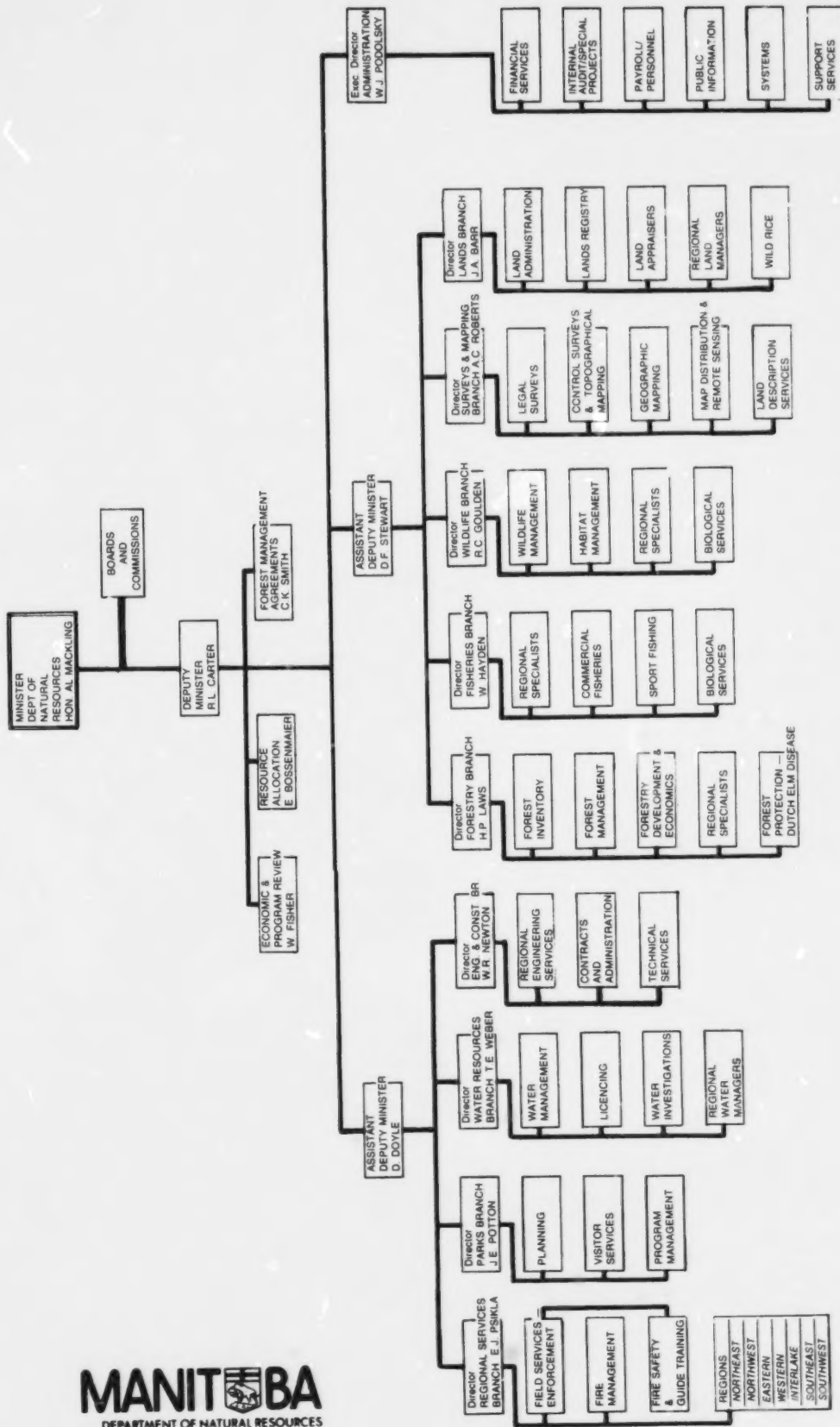
Manitoba entered the mainstream of an international effort to re-establish populations of peregrin falcons. Four young captive-bred falcons were released in Manitoba in August, 1981 and were fed until they left for their winter home in South America. It is hoped that the birds will form the nucleus for a breeding population in the Province. The project was conducted in co-operation with the Province of Alberta and the Canadian Wildlife Service.

I am happy to have become associated with a thoroughly dedicated and professional department, and to have the honour of recording its accomplishments for the 1981/82 fiscal year.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'R.L. Carter', with a long horizontal flourish extending to the right.

R.L. Carter.



DEPARTMENT OF NATURAL RESOURCES
SUMMARY OF EXPENDITURES AND REVENUES FOR THE PERIOD ENDING
MARCH 31, 1982

1981/82
ACTUALS

EXPENDITURES

EXECUTIVE ADMINISTRATION	\$ 361,500.00	
ADMINISTRATIVE SERVICES	2,323,500.00	
RESOURCES EXECUTIVE ADMINISTRATION	604,300.00	
WATER RESOURCES	14,472,900.00	
PARKS	13,706,606.00	
LANDS	2,282,900.00	
FORESTRY	6,242,700.00	
FISHERIES	3,514,500.00	
WILDLIFE	3,881,000.00	
SURVEYS AND MAPPING	2,566,900.00	
ENGINEERING AND CONSTRUCTION	6,033,200.00	
REGIONAL SERVICES	20,894,700.00	
SUBTOTAL EXPENDITURES		\$76,884,700.00
LESS: RECOVERIES FROM DEPARTMENT OF		
NORTHERN AFFAIRS RE: NORTHERN DEVELOPMENT AGREEMENT		(3,718,800.00)
TOTAL EXPENDITURES — 1981/82		<u>73,165,900.00</u>

REVENUES

FISHERIES	969,100.00	
FORESTRY	2,570,400.00	
LANDS	2,797,300.00	
MUNICIPALITIES — SHARED COST RECEIPTS	21,400.00	
PARKS	2,263,600.00	
WATER RESOURCES	10,199,300.00	
WILDLIFE	1,495,000.00	
SUNDRY	398,600.00	
SALE OF GOVERNMENT ASSETS	64,700.00	
GOVERNMENT OF CANADA —	1,737,000.00	
SHARED COST RECEIPTS		
TOTAL REVENUES — 1981/82		<u>\$22,516,400.00</u>

Economics and Program Review Section

Economics and Program Review Section

Responsibilities:

Provides the Department with an economic advisory and analytical service; assists departmental executive and program managers in achieving effective and efficient use of public funds.

During the year the Section conducted feasibility and benefit-cost studies of several existing or proposed projects and programs of the Department. A number of management information reviews were also undertaken to gather data and other statistical information essential for decision making respecting program design and delivery. A variety of programs, both existing and proposed were appraised for their efficiency and effectiveness. Department managers were assisted in identifying and establishing measurable goals for their programs. The Section also carried out special studies related to such matters as fee levels, management information systems and client or user satisfaction.

Projects completed in 1981/82 included a Park Visitor Survey to determine the views of the public toward provincial parks. A comprehensive review was made of all Department fees and charges. An evaluation of proposals respecting a proposed wood bison project, Netley Marsh management alternatives and alternative programs for retaining wildlife habitat on private land were conducted. The effectiveness of the Northern Fishermen's Freight Assistance Program was examined and the Birds Hill tree nursery operation was evaluated. A management information review and analysis of Engineering and Construction Branch activities was conducted and a comprehensive Departmental goals and objectives setting process was carried out.



Resource Allocation and Planning Branch

Resource Allocation and Planning Branch

Responsibilities:

To facilitate implementation of integrated resource allocation, planning, management and development, particularly where a central, departmental focus is preferred over single discipline responses and related primarily to activities in Crown land allocation and planning, environmental assessment, municipal planning, outdoor recreation coordination and special projects.

Crown Land Allocation

Active participation continued in southern land planning through the Crown Land Classification Committee. Completed projects included Crown Land Use Classification Plans for four planning districts, a Policy and Procedures Manual and the Inter-departmental Operational Crown Land Plans Report. Preparation of Crown Land Use Classification Plans was initiated for a number of newer planning districts. As in previous years direct support was given to the Crown Land Classification Committee through provision of a secretary and a variety of technical support services.

This Branch has the responsibility of circulating for clearance purposes Crown land requested for agricultural sale, Local Government District Land Transfer and General Land Transfer. A total of 674 requests — 280 for land sales and 394 for land transfers — were circulated to concerned government agencies, local municipal councils and planning district boards. Subsequently a summary of responses for each request was forwarded to the Crown Land Classification Committee for review and recommendation to the Provincial Land Use Committee as to sale or transfer.

The "Crown Land Handbook for Agro-Manitoba", a set of maps showing the location of most large parcels of Crown land in southern Manitoba, was updated as of December 31, 1981 as an ongoing support project to this and other departments.

Preparation of an inter-disciplinary overview land and resource management plan for the east side of Lake Winnipeg was undertaken. A planning team composed of representatives of Fisheries, Forestry, Lands, Parks and Wildlife branches was coordinated by the Resource Allocation and Planning Branch. The plan is designed to coordinate land and resource management within the Department and so improve departmental administration of land and resources. It is expected that this type of plan will be prepared for other significant resource areas of the province.

Ecological Reserves

In May, 1981, The Ecological Reserves Act was passed in the Manitoba Legislature. The purpose of the Act is to provide for the selection, protection, management and use of ecological reserves in the province. Ecological reserves are legally protected natural land areas established for scientific research and educational use. They represent major land types and plant communities in the province, and are natural areas where balanced communities or ecosystems exist. They are often chosen to protect rare or endangered plants and animals or unusual geographical features.

Prior to the enactment of the legislation, Manitoba had four ecological reserves, all established by Order-in-Council under The Crown Lands Act. The program had reached the stage where it was important that it have special legislation.

Subsequent to the passage of The Ecological Reserves Act, preparation of regulations to facilitate administration of the Act was undertaken. Pocock Lake Ecological Reserve near Marchand was declared and a candidate reserve was protected through a temporary reservation under The Crown Lands Act. Involvement in the Canadian Council on Ecological Areas, which is a Canada-wide co-ordinating group focusing on ecological reserves, was initiated.

Municipal Planning

On behalf of the Department, the Branch participated in several projects initiated under The Planning Act. The Branch was responsible for ensuring conformity of inputs, that the inputs conformed to policy and or preparing the final inputs for the Department.

Co-ordinated inputs were made into eight development plans or basic planning statements. Additionally, a number of plans and reports were reviewed with appropriate comments forwarded as requested.

Subdivision of land for a variety of uses can affect the Department's ability to achieve objectives and deliver programs. Review of proposed subdivisions is coordinated by this Branch and undertaken by the regional staff of Crown Lands Branch. Subdivisions of concern to

the Department are referred back to this Branch which undertakes to resolve the concerns through appropriate inter-departmental mechanisms.

Tourism

As the Department's representative on the Licensing Authority Committee of the Department of Economic Development and Tourism, the Branch reviewed and submitted recommendations on 50 applications for out-camps and caches throughout the province. The Branch reviewed the applications with other concerned branches of the Department relative to the availability of natural resources for tourist industry use. These reviews were used to establish departmental positions and recommendations to the Licensing Advisory Committee.

Environmental Assessment and Review

The Branch prepared Department inputs into Environmental Assessments and Reviews for such projects as The Atomic Energy of Canada Underground Research Laboratory. Several other projects, often related to roads and powerlines were also reviewed.

As the central agency for the Department in these matters, the Branch compiled information from other branches and made it available to project proponents and review agencies. Final assessments of the projects were reviewed, responses compiled and forwarded.

Outdoor Recreation

The Branch provided coordinated departmental inputs into several planning processes related to outdoor recreation. Inputs were designed to ensure the preservation of scarce outdoor recreational resources, to point out demand/supply characteristics, and to provide recommendations for alleviating outdoor recreational concerns.

Special Projects

Input continued into the Lee River Project, an undertaking with other departments, to rationalize existing land development in the Lee River - Pinawa Channel area. Cooperation continued with the Department of Agriculture on the Northern Agricultural Study.

The environmental considerations report for the Prairie Provinces Water Board was completed. This report identifies major fish and wildlife habitats in relation to flow regimes and water quality of major rivers and lakes in the Saskatchewan - Nelson River Basin.

A comprehensive study to prepare a departmental resource and recreation road strategy was initiated. Input from other branches will be an important and integral part of the study. The results of the study will assist the Department in the planning, operation and maintenance of resource roads.

The Branch evaluated a proposed waterways development plan which was submitted by the Waterways Development Board - Lake Manitoba and Lake Winnipegosis.

The Branch evaluated the operation of the Moose Lake Narrows Control Structure and prepared a report with recommendations. A refined method of operation would allow the control structure to remain open for longer periods than has been the situation in the past.

Administrative Services Division



Administrative Services Division

Responsibilities:

Provides administrative and professional support to the Department; ensures on behalf of the Deputy Minister and the Minister that administrative policies, procedures and directives are followed.

Financial Services

The Financial Services Section provided accounting and administrative support to all branches of the Department with particular emphasis on financial control and management information systems. The Wildlife and Fisheries Licensing Services implemented new vendor control guidelines and established new procedures for big game licence draws including the establishment of a fall elk licence draw.

Personnel Services

Expansion of the Workplace Safety and Health Program continued in the Department with the number of safety committees being increased from 32 to 51 during the year. Introductory seminars were delivered to all branches and regions by year end.

The 1981 forest fire season ranked less serious than the previous year but nevertheless resulted in the employment of more than 3,000 firefighters, mainly in the northern part of the province. Administrative problems with respect to the payment of wages to these employees were considerably reduced as a result of revised and new policies issued the previous year.

During the year, 247 staff members participated in a variety of training seminars ranging from the essentials of management, problem solving, technical writing, role of the supervisor, to records management.

Three special Cardio-Pulmonary Resuscitation (CPR) workshops were held with a total of 74 employees attending.

Special workshops were held for Administrative Officers and Clerical personnel, with a total of 93 staff members attending.

Systems

The Systems Section assisted in designating the Dial-a-Site program, a campground reservation system to be implemented in 1982 on a trial basis. A report outlining the Department's needs for word processors was completed. The Section also assisted in analysing the results of the Parks attitude survey conducted in the summer of 1981. A computer-based information system was delivered to process applications and randomly select winners for big game draws. A fish and wildlife licensing system was installed to control vendor accounts, produce charge statements and assist in the distribution

of the various licence types. The Section assisted branches in determining their needs for microcomputers and helped in acquiring the equipment.

Public Information Services

The Section was heavily involved in providing professional and technical assistance to other branches of the Department on request. Signs were designed and prepared for the Bur Oak Trail in Birds Hill Provincial Park, Aspen Fitness Trail at Spruce Woods Provincial Park, the Kinsmen Fitness Trail in Winnipeg and for abandoned mine sites in Nopiming Provincial Park. Displays were designed and prepared for the Garrison project, Dutch Elm Disease Program for the Flood Damage Reduction Program. Public Information produced or arranged for advertising programs for National Wildlife Week, forest protection programs, parks program, campground rowdiness campaign and seasonal camping.

The Public Information Section assumed responsibility for all Department publications during the year. Assistance was provided to each branch in editing, preparation of material for printing, arranging for printing, storage and distribution.

As part of the Public Information Section, the two Wilderness Corps camps hosted 42 teen-aged students for eight weeks during the summer. An additional 60 children from the Police and Pal Association participated for a shorter period as part of the Corps' leadership training program.

"Resource News" radio program continued on eight Manitoba radio stations. Shorter versions of the program were carried by eight other stations, either as news items or single interviews. A weekly program summary sheet was introduced to make the material available to newspapers and television.

The Resource Information Service continues to grow in popularity. The total number of calls increased by 21% over the previous year to nearly 20,000. Besides answering telephone enquiries, the two full-time employees also provide a writing service for the Department.

Resource materials were available on request to the general public, schools and outdoor groups through the film lending library, publications and the two periodicals "Conservation Comment" and "The Outsider".



Fisheries Branch



Fisheries Branch

Responsibilities:

Develops and implements fisheries management programs designed to maintain or enhance fish populations in the province; monitors the effects of fishing and habitat alterations on fish populations; operates and administers the provincial fish hatcheries to increase and/or sustain fish resources in Manitoba; allocates and administers the fishery resource to maximize economic returns to Manitobans and administers the Northern Fishermen's Freight Assistance Program.

Commercial Fishing

With the help of the Northern Fishermen's Freight Assistance Program, many marginally viable commercial fisheries in the north continue to operate. For the summer of 1981, payments totalling over \$207,000 were made to 384 commercial fishermen. Payments for the winter season of 1981/82 of more than \$49,000 were made to 151 fishermen.

NORTHERN FISHERMEN'S FREIGHT ASSISTANCE

(The Following Amounts are not Included
in Gross Landed Value)

	Summer 1981 Payments	Winter 1981/82 Payments
Whitefish	\$133,443.79	\$22,130.45
Pike	57,266.20	22,033.81
Trout	7,255.98	869.22
Tullibee	9,292.90	4,266.07
Perch	102.16	43.87
Goldeye	569.12	28.59
TOTAL	\$207,930.15	\$49,342.01

The Lake Winnipeg Licensing Review Board, composed of commercial fishermen and departmental representatives, met prior to each season on Lake Winnipeg and heard 15 eligibility appeals. The Board's recommendations were forwarded to the Minister of Natural Resources.

In the past, fishermen on Lake Winnipeg were allowed to fish their quotas during any season they chose regardless of the season in which they were licensed. This practice has ended. The harvesting of winter quotas during spring or fall, or fall quotas during the spring, contributed to a fish glut at certain times during the summer and shortages of fish in the winter when high selling prices were evident. This regulation change was an important step toward levelling production peaks and shifting deliveries from summer to winter.

Forty commercial fishermen from Grand Rapids harvested nearly 160,000 kilograms of fish valued at \$266,953 during an experimental fall season conducted on the northwest corner of Lake Winnipeg. Based on the desire of Grand Rapids fishermen for additional employment

and income opportunities and an abundance of whitefish in the north end of Lake Winnipeg, this experimental fall season was allowed. Grand Rapids fishermen also accepted a greater degree of responsibility regarding the operation and management of their fishery as a result. The existing five year Cedar Lake Fisheries Management Agreement was revised by increasing the lake quota from 363,000 kilograms to 454,000 kilograms. A five year management agreement was established with the Saskatchewan River fishermen increasing their commercial quota from 68,100 kilograms to 90,700 kilograms. Fisheries Branch will monitor the effects of these increased harvests and, if necessary, quota adjustments (up or down) will be made at the end of this five year period.

Fisheries Branch completed a two year study, funded by Manitoba Hydro, of the impact of Jenpeg water regulation on Cross and Pipestone Lakes commercial and domestic fisheries. A direct correlation was identified between water drawdown regime and poor year classes of whitefish and cisco (tullibee) on the two lakes. A minimum water level to mitigate the impact on fish stocks was recommended.

A study on the Netley Marsh fish resources was completed. It investigated the productivity of the marsh and its use as a spawning, nursery and rearing area by fish from the Red River and Lake Winnipeg. The study was initiated in response to a Ducks Unlimited Canada proposal for compartmentalization and water control of the Netley Marsh.

A lake inventory program of northern lakes to determine the potential resource base and optimum allocation and development levels was concluded.

Regular meetings continued with the Lake Winnipeg Commercial Fisheries Management Advisory Board, the Lake Winnipegosis Commercial Operators and Fishermen's Association and the Lake Manitoba Commercial Fishermen's Association. These organizations provide a means for commercial fishermen to have input into the management of the fisheries industry.

At the request of the Lake Winnipeg Fisheries Management Advisory Board, study and planning of an alternative commercial fishing licensing system for Lake Winnipeg was initiated. Board members presented their area fishermen's views and recommendations on how a system of transferable quotas could be developed and introduced on Lake Winnipeg, and will review resultant proposals developed by Fisheries Branch.

Several on-going projects continued from previous years. Investigations into the growth and survival of walleye fry in selected Lake Winnipegosis rearing ponds and the contribution of pond-reared walleye to the Lake Winnipegosis commercial fishery continued in 1981/82. Experimental fyke netting and trawling programs were again conducted on Lake Winnipeg to index yearlings and young-of-the-year pickerel and sauger. Index fishing and commercial catch sampling programs were continued on a number of lakes to monitor the conditions of various fish stocks.

Information used to tabulate the statistics for commercial fishing production during the fiscal year was not available in time to be included in this report. However, it may now be obtained by contacting the Fisheries Branch, Manitoba Department of Natural Resources.

Tourist Angling

The continued operation of tourist lodges in the northern and eastern areas of the province is largely dependent on the proper management of game fish. The Fisheries Branch, in cooperation with the lodge owners, continually monitor the impact of angling on fish stocks in developed lakes. In addition, many undeveloped lakes have been examined for their potential for future development.

A creel census was conducted on Harrop and Wrong Lakes during the summer of 1981. These censuses provided information on fish harvest and will assist in developing management and allocation recommendations for lakes on the east side of Lake Winnipeg.

A fisheries workshop was conducted with the Manitoba Lodge and Outfitters Association to provide information to the operators on Branch policies, licensing procedures and future management initiatives as well as to seek recommendations from the industry.

Trout Farming

During 1981/82, 372 trout farming permits were issued to persons wishing to raise trout for personal use, and 30 trout licenses were issued to commercial operators.

The Branch continued to provide information and technical assistance to anyone interested in the program.

FISHERMEN EMPLOYED IN MANITOBA'S COMMERCIAL FISHERY, 1981/82*

	NORTHERN LAKES	LAKE WINNIPEG	LAKE MANITOBA	LAKE WINNIPEGOSIS	OTHER LAKES	OVERALL
SUMMER						
Licensees	482	717	75	56	88	1,400
Hired Men or Helpers	141	258	0	126	0	520
Total	623	975	75	182	88	1,920
WINTER						
Licensees	259	277	494	115	366	1,501
Hired Men or Helpers	77	153	512	147	280	1,156
Total	336	430	1,006	262	646	2,657
ANNUAL						
Licensees	576	745	512	126	391	2,321
Hired Men or Helpers	174	295	509	213	280	1,446
Total	750	1,040	1,021	339	671	3,767

Those fishermen who fish more than one area or season or who fish both as hired men and licensees are counted only once in the appropriate "Total" column (The hired man — licensee duplicate is counted as a licensee). Since duplications are eliminated, the table does not add horizontally or vertically.

* This table includes 38 fishermen from Lake Winnipeg who hold only retirement licences and 20 fishermen from northern lakes holding only general permits.

Bait Fishing

The Fisheries Branch is responsible for the administration and regulation of the bait fishing industry in the province. During 1981/82, 33 bait fish licenses encompassing a total of 257 blocks were issued. In addition, three live bait fish dealers were licensed.

Fish Hatchery Production

Over the year, more than 70 million walleye fry, nearly 90 million whitefish fry and 500,000 whitefish fingerlings were stocked in commercially fished waters. In addition, 860,000 eyed lake trout eggs were returned to spawning grounds. Over 400,000 walleye fry were supplied to research projects.

Sales of fish eggs resulted in the return of over \$3000.00 of receipts to general revenue. Eggs sold were 300,000 lake trout and 10,000 whitefish. Sport fish species were stocked in suitable waters to enhance and diversify sport-fishing opportunities.

FISH STOCKED IN SPORTFISHING WATERS, 1981/82

Species	Adults (Including yearlings and two-year-olds)	fingerlings	fry
Walleye			4,900,000
Pike	5,124		
Muskellunge			95,000
Perch	31,800		
Smallmouth Bass		50,700	
Lake trout	139,580		
Rainbow trout	176,722	147,300	
Brook trout	178,948	180,150	
Brown trout	47,300	16,580	
Cutthroat trout		35,900	
Splake	38,800	84,000	

Sport Fishing

Fisheries Branch continued to promote the use of the under-utilized fish species and encouraged anglers to "Go Barbless" and support the catch and release program.

Experimental regulations requiring the use of single barbless hooks and reduced limits were used on Singush and Webster Lakes. These two lakes will be monitored to determine the effects of this innovative regulation.

The annual winter program of monitoring dissolved oxygen in sport fishing lakes was continued to determine whether or not winterkill conditions exist.

Experimental aeration — destratifier systems were operated at Killarney Lake and Mary Jane Reservoir in an effort to improve the water quality and reduce the likelihood of fish winterkill. An experimental ice clearing and water pumping project to facilitate oxygen production and reduce the likelihood of fish winterkill was conducted on Oak Lake in cooperation with local residents. A grant of \$5000 was provided to local people by the Province to conduct this experiment. Fisheries Branch monitored oxygen levels on Oak Lake before, during and after the project.

ANGLING LICENCE SALES & REVENUE, 1972/73 to 1981/82

Year	RESIDENT LICENCES			NON-RESIDENT LICENCES						TOTAL LICENCES	
	Number	Fee	Revenue	3 Day Licences			Seasonal Licences			Number	Revenue
				Number	Fee	Revenue	Number	Fee	Revenue		
1972/73	117,621	\$3.00	\$323,943.00	7,501	\$5.00	\$35,757.00	24,423	\$10.00	\$238,821.50	149,545	\$598,521.50
1973/74	127,440	3.00	350,917.00	7,871	5.00	37,517.50	26,217	10.00	256,380.00	161,528	644,814.50
1974/75	137,492	3.00	378,546.75	7,420	5.00	35,357.50	24,306	10.00	237,630.50	169,218	651,534.75
1975/76	142,254	3.00	391,682.50	8,423	5.00	40,240.00	28,306	10.00	276,691.75	178,983	708,614.25
1976/77	150,020	3.30	458,213.85	9,845	5.50	51,957.50	29,475	11.00	317,603.80	189,340	827,775.15
1977/78	148,289	3.30	452,849.70	9,175	5.50	48,401.25	28,363	11.00	305,800.50	185,827	807,051.45
1978/79	156,553	3.30	477,979.15	10,918	5.50	57,569.75	29,929	11.00	322,571.00	197,400	858,119.90
1979/80	155,790	3.30	475,621.75	9,590	5.50	50,534.25	31,029	11.00	334,312.75	196,409	860,468.75
1980/81	159,584	3.30	487,384.20	8,658	5.50	45,612.50	32,353	11.00	348,565.25	200,595	881,561.95
1981/82*	159,233	3.30	486,394.90	8,439	5.50	44,369.50	32,037	11.00	344,723.50	199,709	875,487.90

NOTE: Revenue figures are net (less vendor's commission).

*Subject to reconciliation and audit.

Forestry Branch



Forestry Branch

Responsibilities:

Administers The Forest Act; develops commercial harvesting plans for Manitoba's forests; administers timber cutting licensing and measurement; conducts tree improvement and forest genetics studies; coordinates silviculture, reforestation and timber management programs; maintains a forest inventory; develops forest protection programs; conducts Dutch Elm Disease control programs.

Forestry Administration

The year 1981 was important for the Forestry Branch as it marked the beginning of a potentially critical turning point relative to the future of the forestry sector in Manitoba.

On December 31, 1981 the Branch, together with the assistance of Forestal International, a forestry consulting firm, completed a twenty year Forest Management Plan for the province. Financial support for the project was received from the federal government under the Western Northlands Subsidiary Agreement. The plan is a prescription for sound and responsible management of the province's forest resources to the year 2000. It is the blueprint from which forest utilization, industrial development, road access, sophisticated forest monitoring, improved fire management and forest renewal and tending programs will be developed. Five year assessments of the status of forestry and achievements are an integral part of the plan implementation.

Timber Management

Timber Production From Crown Lands

The volume of timber harvested from provincial Crown Lands declined significantly (-23.18%) for the 1981/82 fiscal year. Poor markets caused this decline and projections for the following year indicate a continuation of this trend. By mid-March, many producers had filled their contracts and buyers were reluctant to accept more wood than the contracted amount.

Actual production this fiscal year amounted to 1,782,078 cubic metres compared to 2,319,991 last year. The only product class to post an increase was railway ties (+31%). This was followed by line poles and fuelwood which dropped less than 10%. Round timber lumber and pulpwood losses were in the 20% to 25% range, while fence posts declined 36% and mine timber recorded a 52% roundwood volume loss.

Annual Harvest and Value Added¹ by Forest Industry Sector, 1973 to 1982²

Value Added by Forest Industry Sector

Year	Total Harvest (In Cubic Metres)	Forestry Revenues	Logging	Primary Manufacturing ³	Secondary Manufacturing ⁴	Total
1973	1,571,544	\$ 811,851.80	\$11,000,000	\$30,000,000	\$41,000,000	\$ 82,000,000
1974	1,588,759	843,081.37	16,500,000	40,000,000	66,000,000	122,500,000
1975	1,932,383	924,586.53	19,000,000	37,000,000	53,000,000	109,000,000
1976	1,851,552	1,739,308.27	16,000,000	35,000,000	54,000,000	105,000,000
1977	1,519,998	1,345,601.02	16,500,000	37,000,000	61,000,000	114,500,000
1978	1,646,562	1,176,078.00	20,000,000	59,000,000	81,000,000	160,000,000
1979	1,714,300	1,292,180.63	19,500,000	64,000,000	76,000,000	159,500,000
1980	1,940,082	1,624,290.86	25,700,000	74,000,000	75,000,000	174,700,000
1981	2,319,991	1,908,776.72	28,300,000	76,000,000	77,000,000	181,300,000
1982	1,782,078	1,792,589.82	21,600,000	n/a	n/a	n/a

¹ Value Added is the value of production minus the cost of materials purchased from other industries.

² Fiscal Year ending March 31 used for harvesting and logging statistics. Calendar year used for primary and secondary manufacturing value added.

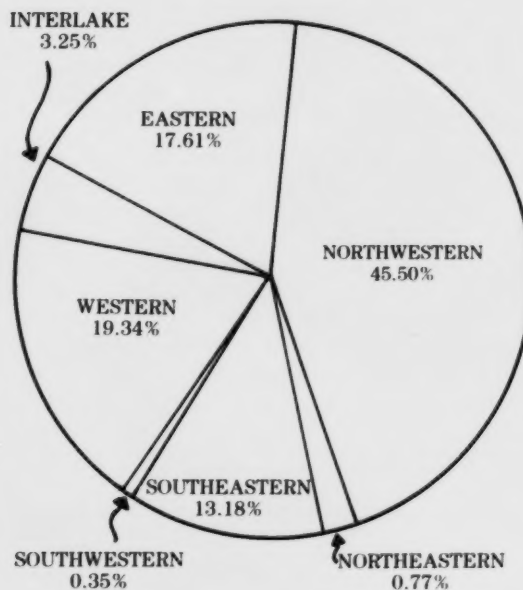
³ Primary manufacturing includes sawmills and planing mills, miscellaneous wood.

⁴ Secondary manufacturing includes sash, door and other millwork; coffin and casket industry; wooden box factories; asphalt roofing manufacturers; and miscellaneous paper converters.

Summary of Annual Forest Production by Forest Product (in cubic metres), 1977/78 to 1981/82 ending March 31st.

Year	Pulpwood		Lumber		Fuelwood		Other		Total	
	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%
1977/78	964,205	58.6	558,908	33.9	54,543	3.3	68,906	4.2	1,646,562	100%
1978/79	967,363	56.4	559,326	35.0	78,212	4.5	69,399	4.1	1,714,300	100%
1979/80	1,124,615	58.0	647,470	33.4	103,716	5.3	64,281	3.3	1,940,082	100%
1980/81	1,458,039	62.9	681,876	29.4	95,893	4.1	84,223	3.6	2,319,991	100%
1981/82	1,100,921	61.8	535,034	30.0	88,369	5.0	57,754	3.2	1,782,078	100%

Timber Cut by Departmental Regions 1981/82



Scaling Courses

The Departmental Metric Refresher and Certification courses were again held in May 1981. Seven candidates attended the 2-1/2 day refresher course and 16 participated in the week long certification course. Swan River was again the location for this program as the two major sawmills at the north end of town have excellent sources of logs and wood piles needed for the field work. In addition, students enrolled in the forestry option course at the Swan Valley Regional Secondary School were given leave to attend this course as part of their forestry option program.

Forest Renewal

1) Reforestation

With the help of favourable weather conditions, 5948 hectares were reforested by the Forestry Branch in 1981/82, primarily in the northern and western portions of the province. A total of 3,952,978 seedlings were planted on 1787 hectares. In addition, 272 hectares were prepared and seeded and 3889 hectares were scarified and left for natural seeding from cone-bearing slash. By region, the area reforested in hectares was; Northwest/Northeast — 3056, Western — 1127, Eastern — 953, Southern/Southwestern — 717, and Interlake — 95.

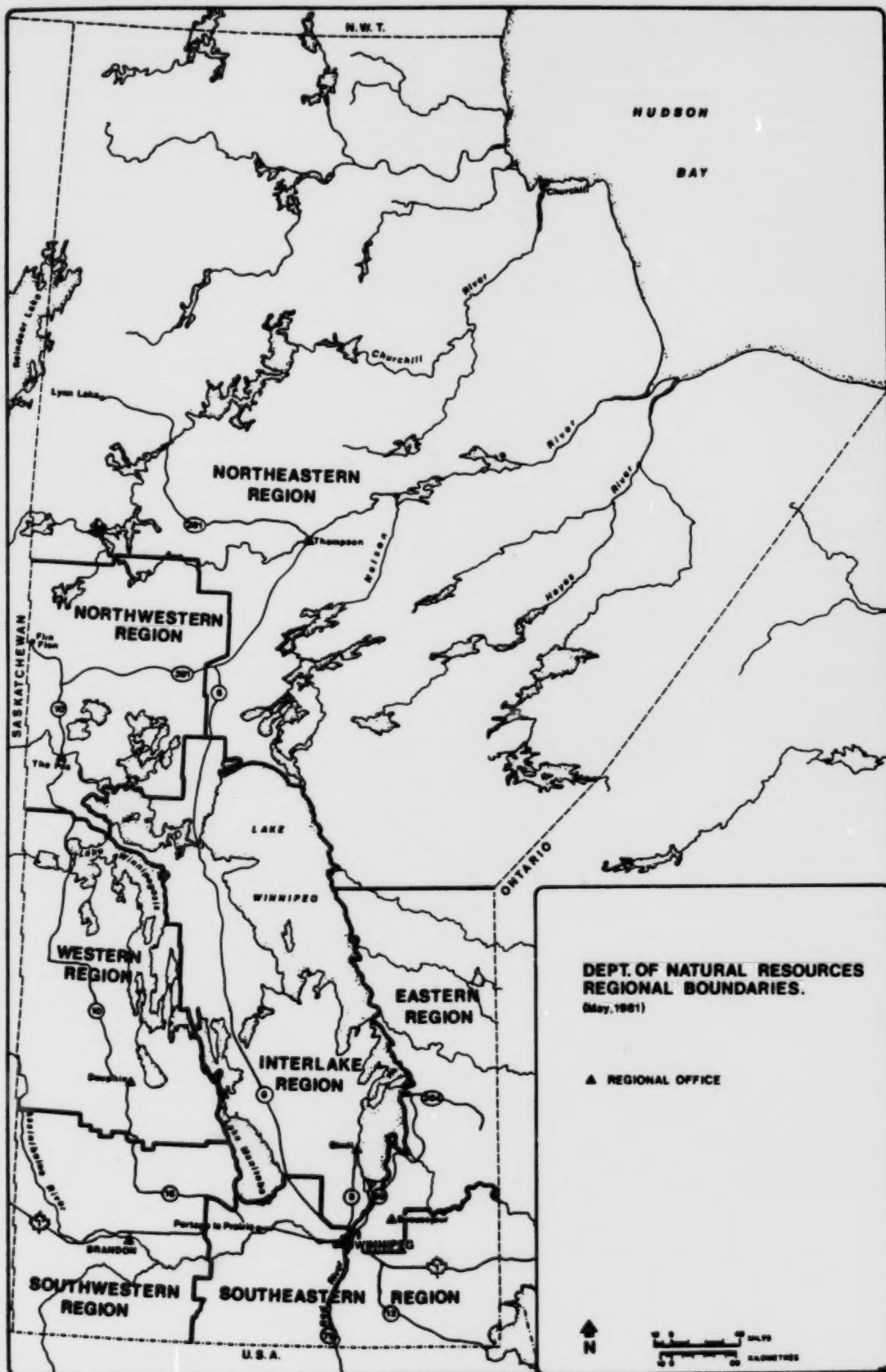
All containerized stock produced in the four greenhouses at the Hadashville nursery were grown for the Abitibi Price Inc. forest management licence. The company planted 562,260 black spruce and 283,382 white spruce on 560 hectares.

The C and H plow and planting machine was used for the first full season and planted 388,625 bare root seedlings. The cost for machine planting was 29.5% lower than the normal hand planting method. The machine performed up to its expectations and has proven its merit for additional units in the south and other sandy sites within the province.

Approximately 8031 hectares of natural regeneration forest (includes 163 cut-overs) and 781 hectares of plantations (includes 28 plantations) were surveyed for survival and growth performance.

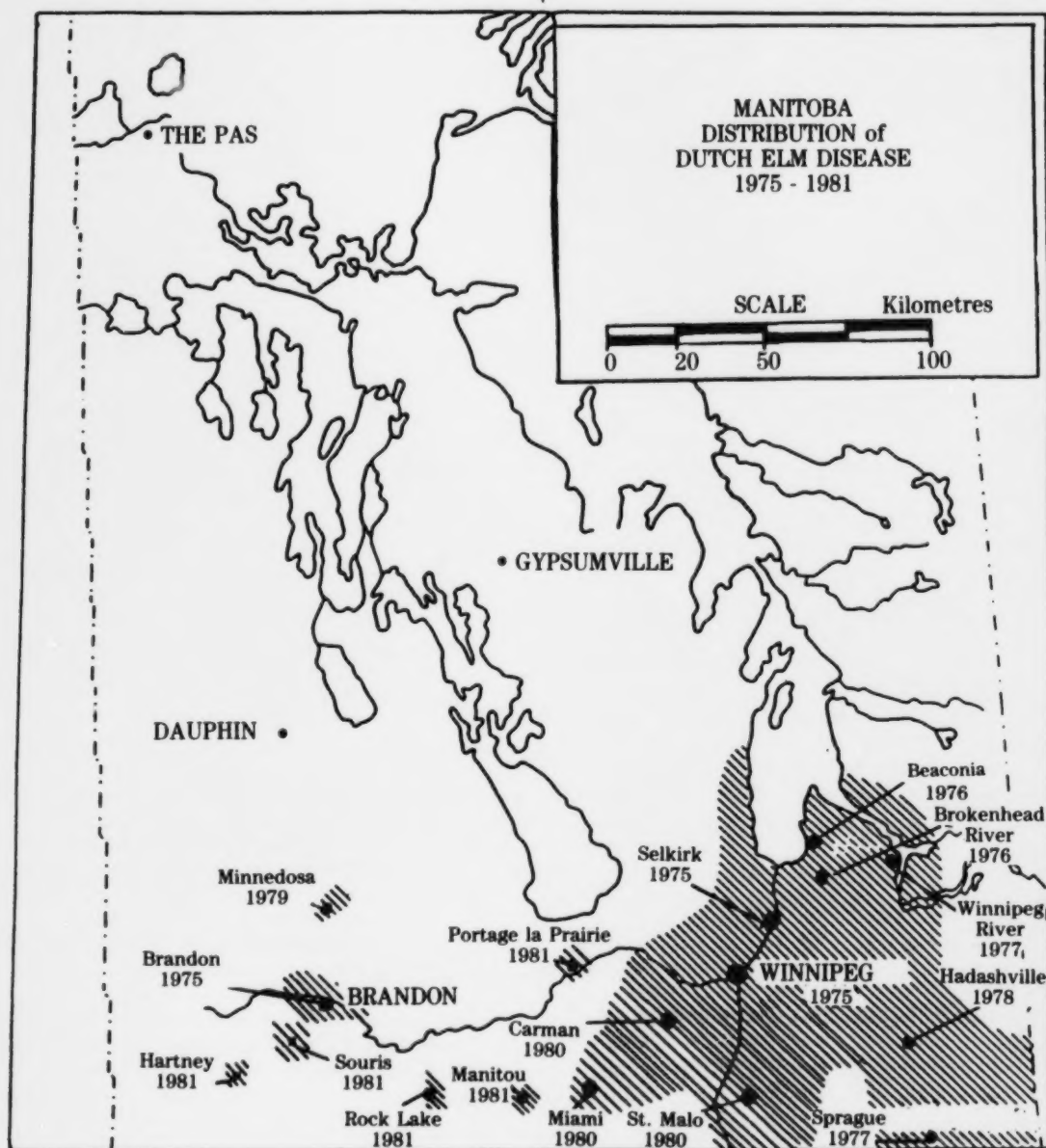
2) Tree Improvement and Forest Genetics

Two more seedling orchards of black spruce and white spruce were established bringing the total to four. Site preparations continued for additional areas to establish jack pine orchards. The objective of the seed orchard program is to raise genetically superior seed for use in the reforestation program. The first batch of improved seeds of black spruce and white spruce has been produced.



In other activities, a new fertilizer schedule has been formulated for use on containerized black spruce seedlings, a culling manual for bareroot conifer stock was compiled and a set of procedures for determining seed quality of conifer seedlots was developed.

A program to develop superior strains of black spruce, white spruce and jack pine through grafting continued. A program of monitoring provenance tests of conifers, hybrid poplar Walker and exotic genera was carried on from previous years.



Dutch Elm Disease Control Program

1) General

The Dutch Elm Disease control program has two main goals. The first is to limit the spread of the disease from wild elm stands to urban communities where planted elms are a major component of the shade tree population. The second is to reduce the impact of the disease in these centres by preserving the present elms for as long as possible or until they can be replaced with resistant varieties or alternate species. Program activities in 1981 involved surveillance, sanitation (tree removals and disposal), cost-sharing agreements and research.

The highlight of the year was the Dutch Elm Disease Symposium and Workshop held October 5th to 9th in Winnipeg and sponsored jointly by the Manitoba Department of Natural Resources and Environment Canada, Canadian Forestry Service. The theme of the meeting, Dutch Elm Disease — An Integrated Approach, recognized that an integrated approach was necessary in both research and in actual control or management of the disease in the field. It was the largest ever scientific and technical meeting on Dutch Elm Disease and attracted over 250 delegates and speakers from five countries (Canada, United States, The Netherlands, Sweden and The United Kingdom). The proceedings of the Symposium and Workshop, consisting of 43 scientific and technical papers, will be published in 1982.

2) Disease Occurrence and Distribution

Dutch Elm Disease continued to spread in Manitoba in 1981. It was recorded in 14 new localities; Emerson (RM of Franklin), Morris (RM of Morris), Steinbach (RM of Hanover), Lorette (RM of Tache), Portage la Prairie (RM of Portage la Prairie), Manitou (RM of Pembina), Souris (RM of Glenwood), Hartney (RM of Cameron) and in the rural municipalities of MacDonald, Rosser, Montcalm, Argyle, Cornwallis and Elton. There was also a substantial increase in the incidence of Dutch Elm Disease in the Winnipeg area from 315 infected trees in 1980 to 757 and in the Brandon area from 106 to 298. However, the majority of these new infections in the Winnipeg and Brandon areas occurred along the rivers in native elm stands; the disease is being kept at low levels in planted elms within the cities by good management practices.

Elsewhere, Dutch Elm Disease has been most severe in the southeastern section of Manitoba. Disease infection has remained high in native white elm stands east of the Red River from Sprague northward along the Sprague, Whitemouth, Brokenhead and Winnipeg rivers to Lake Winnipeg and along the Red River from Lockport through Selkirk to Winnipeg Beach and Gimli. Throughout this region where no control procedures have been applied, other than tree removals, most of the native elm stands are completely devastated and disease incidence is increasing in urban plantings and farmstead shelterbelts.

The effectiveness of an integrated Dutch Elm Disease control program can be seen in tree loss figures for Selkirk, Brandon and Winnipeg from 1975 - 1981. Selkirk's control program has consisted only of removing diseased and hazard trees, and losses have reached as high as 65%. On the other hand, Brandon's program, which combined the removal of diseased and hazard trees with intensive pruning, has resulted in losses of only 2% to date. Winnipeg has kept tree losses since 1975 to less than 1% by utilizing in their program all the latest management strategies.

3) Surveillance and Sanitation

Weather conditions were ideal for tree growth during the spring and summer. The leaves developed on elms in early May and remained green until mid-September. Surveillance activities began May 11 and continued through the second week of September, about three weeks longer than normal for Manitoba where the elms usually begin turning color in late August. Eighteen summer students, an increase of six from 1980, were employed on surveillance and two on laboratory assignments. The City of Winnipeg also employed 14 summer students for surveillance. Approximately 4726 elms were sampled in the province, 1482 in the City of Winnipeg and 3244 in rural areas. The extended period for surveillance and additional personnel resulted in an increase of about 1535 samples from 1980.

Tree removals were carried out in 57 rural municipalities and communities. Provincial Dutch Elm Disease sanitation crews removed 10,513 diseased and high-risk trees in rural Manitoba, the City forestry crews 6827 in Winnipeg, and the Parks Department 1846 in Brandon.

4) Cost-Sharing Agreements

New policy developed in 1980 authorized the Government of Manitoba to enter into cost-sharing agreements for carrying out Dutch Elm Disease control with all urban and rural municipalities. Agreements totalling \$378,358 were initiated with 10 communities in 1981 as follows: Brandon (\$18,939), Carman (\$750), Dauphin (\$2100), Gimli (\$750), Morden (\$2260), Pine Falls (\$600), Portage la Prairie (\$1500), Selkirk (\$4546), Stonewall (\$800), and Winnipeg (\$346,113). In addition, special tree removal and demonstration contracts in the amount of \$99,000 were negotiated with the cities of Brandon and Winnipeg and the towns of Carman, Dauphin, Selkirk and Pine Falls.

5) Research

Two major research projects were conducted during the year. The effectiveness of the bacterium *Pseudomas syringae* in controlling Dutch Elm Disease was studied. Injecting elm trees with natural biological agents may be a feasible method for long-term control of the disease. Preliminary analysis of data from 91 diseased and non-diseased trees indicates that the bacterium may effectively control some strains of the Dutch Elm Disease fungus.

The use of trap-logs to monitor elm bark beetle activity and the efficiency of insecticide treatments was also examined. Investigations indicate that the chemical insecticide Chlorpyrifos, when properly applied, will reduce elm bark beetle breeding in trap-logs by at least 98%.

Forest Pest Management Program

The parasitic plant, dwarf mistletoe, attacks a number of coniferous species in Manitoba resulting in considerable volume loss and eventual tree mortality.

A long-term program was begun in Spruce Woods Provincial Park for the management of dwarf mistletoe on white spruce. The program is to be carried out in high recreational value areas designated by the provincial Parks Branch.

An information pamphlet on the management of jack pine dwarf mistletoe in cottage subdivisions was prepared for distribution. Considerable data has been collected regarding the rate of spread and volume losses caused by this parasite.

The white spotted sawyer beetle, which attacks dying and fire-killed trees can result in considerable damage to manufactured lumber. A damage appraisal study of the white spotted sawyer beetle was done at the request of Man-for in the Kipahigan Lakeburn area. The infestation level was severe enough to cause considerable downgrading of lumber products. A follow-up study was done for sawyer beetle attack in the Porcupine Mountain fire area. Green and lightly burned trees within the burn area were not severely attacked, making the area still suitable for salvage operations.

The spruce budworm, the most serious defoliator of white spruce and balsam fir, caused scattered moderate and severe defoliation in the Whiteshell and Interlake. Approximately 37 hectares of balsam fir and white spruce at Dorothy Lake and Opapiskaw campgrounds were ground sprayed for spruce budworm. Aerial spraying on spruce budworm was carried out at Hecla Island over 364 hectares. A bacterial insecticide, *Bacillus thuringiensis* was used at all three locations. Approximately 70% larval reduction was achieved.

The birch leaf miner, an introduced species has caused widespread leaf mining damage to white birch. The current infestation has lasted approximately 10 years. Three control methods, trunk injection, Acecap implants, and Cygon banding were tested on birch leaf miner in the northwestern region. Over 90% control was achieved with the trunk injection and Acecap methods. Cygon banding proved little better than no control.

Forest Inventory

Forest inventory reports summarizing forest conditions and wood volumes available annually were completed for Forest Management Units 45 and 46 in The Interlake Forest Section, and Management Units 01 and 02 in the Aspen Parkland Forest Section. In addition, reports for Forest Management Units 23, 38 and 39 were revised based on new forest management unit boundaries established in 1980.

Forest survey crews collected sample plot data in Management Units 02, 04 and portion of 05 in The Aspen Parkland Forest Section of south-central Manitoba. On the area covered by the forest survey field parties, 3796 sample plots were established and 29,914 trees were measured for the revision of one stand/stock volume table.

Statistical reports for areas in the northern portion of the Interlake Forest Section indicate increases in volumes of all tree species and a significant reduction in the area left treeless after the extreme 1961 fire year. Trembling aspen continues to be more successful in regenerating fire areas than the commercially important softwood species which formerly occupied the growing sites.

Preliminary estimates of wood volume made in the late 1940's indicated a merchantable volume of 11 million cubic metres of wood was located in the Aspen Parkland Forest Section consisting of 95% deciduous species and 5% coniferous species. New detailed forest inventory data for the first 3 forest management units in this forest section show a merchantable volume of 24.4 million cubic metres of wood which consist of 96% deciduous species and 4% coniferous species. This merchantable wood volume is located on approximately 15% of the land area of the 3 units. Continued significant increases in hardwood merchantable volume, compared to predictions made in the 1940's, are expected.

The aerial photography program for the Swan River, Porcupine Mountain, Mafeking and Grand Rapids South Forest Management Units was completed after a one year delay caused by wildfire smoke problems. As part of the Dutch Elm Disease program a second large area in south central Manitoba extending in a belt from Lake Winnipeg to the Saskatchewan boundary including Gimli, Riverton, Neepawa, Ste. Rose, and Roblin was photographed on schedule. Aerial photography obtained under this project continued to be in demand by a wide range of agencies.

FOREST INVENTORY PROJECTS 1981/82

<u>Projects</u>	<u>Area in</u> <u>Square Kilometres</u>
Aerial Photography	32,230
Forest Cover Mapping	29,720
Air Photo Interpretation	29,150
Forest Surveys	21,230
Area Compilation	28,760
Area and Volume Statistics	24,520
Forest Inventory Reports	33,510
Township Air Photo Mosaics	21,620



Lands Branch

Lands Branch

Responsibilities:

Administers most of the Crown land in Manitoba under The Crown Lands Act; maintains a Crown lands register; negotiates outstanding treaty claims and land settlements with Indian bands and the Canada Department of Indian and Northern Affairs; administers the allocation of wild rice leases on Crown land.

Temporary Dispositions

The Branch received numerous requests to use Crown land from individuals and groups for purposes such as primary residences, recreational cottage, gardens, commercial facilities, etc. The Branch also administered vacation home lots in provincial park lands. Where possible, 21-year leases are encouraged for security of tenure but, since it is a requirement that land be legally surveyed prior to lease, many allocations of land are made by means of annual permits.

During 1981/82, Lands Branch recommended adoption of new rental and fee schedules to standardize and update outdated schedules. These recommendations were approved, and the new schedules will be effective during the 1982/83 fiscal year.

LEASES AND PERMITS AND REVENUE, 1981/82

(Figures are approximate)

Vacation home leases and permits	6400	\$683,000
Miscellaneous leases	350	49,500
Crown land permits	1900	29,000
Garden lot permits	315	6,200
Wild rice leases	244	3,900
TOTALS	9209	\$771,600

Agencies such as Manitoba Hydro and Manitoba Telephone System request the use of Crown lands for transmission lines and related facilities. Such requests are accommodated by temporary reservations pending survey. When survey plans have been done, easement agreements are executed. Approximately 500 such agreements are in effect at the present time. In 1981/82, a system of charging for easements, based on a percentage of appraised value, was instituted.

Municipal governments and the Department of Northern Affairs, on behalf of local communities, request Crown land for community buildings, garbage disposal sites and other community purposes. Such requests are accommodated by reservation of the required lands in the Crown land registers. Lands required by other branches of this Department, and by

other departments such as the Department of Highways and Transportation are also reserved pending permanent disposition.

Permanent Dispositions

Permanent dispositions of Crown land are made by way of sales, exchanges on designation by Order-in-Council. In 1981/82, 130 such orders were approved, covering dispositions of some 280 parcels of land.

Of the 178 long-term sale agreements in effect from 1967 and prior years, 18 were paid out and land transferred in 1981/82, leaving 160 agreements in effect. Capital and interest payments on these accounts totalled \$94,800.

Conveyance of mines and minerals for consolidation with surface rights to permit registration of plans of subdivisions is an ongoing service, and 33 such conveyances were made in 1981/82.

Transfers of land were also made to Public Works Canada for federal programs servicing the province (e.g. wharves, RCMP sites, airports) and to northern cities and towns for townsite expansion.

Sales of Crown land to eligible applicants continued during most of 1981 in accordance with previously approved policy. New applications to purchase were deferred after December 9, 1981 pending a detailed policy review, but processing of sales in progress as of that date continued. It is anticipated that new policy statements governing Crown land sales will be finalized in 1982/83.

Transfers or Grants Issued Under The Land Sales Program and Revenue, 1981/82

Agricultural sales	161	\$1,623,000
Recreational/commercial	28	257,700
Primary residence	64	50,230
TOTALS	253	\$1,930,930

Appraisal Program

The appraisal of Crown land for sale, lease or exchange continued during the year with a total of over 650 appraisals completed. The sale of agricultural Crown land required 455 appraisals, while the land exchange program with local government districts accounted for 115 appraisals. The balance was made up of appraisals for residential and commercial sites, and recreational lots for sale/lease throughout the province.

Crown Land Registry

The Crown Land Registry is a record of all land transactions under The Crown Lands Act and is the only record of original dispositions. It contains approximately 750,000 records. In 1981/82, 26,500 entries and 3500 land searches were made by Branch staff. In addition, the registry was consulted daily by other government personnel and the public.

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During the year consultants completed the design and programming for a computer-assisted automated registry system that also serves to automate administration of Crown land permits and leases as relating to inquiry, invoicing, accounting and issuance of the permit. Approximately 25% of the registry data has been entered into the system.

Indian Land Claims

All Indian land claims received were reviewed by the Interdepartmental Indian Land Claims Working Group in accordance with established policy guidelines.

Lands have been transferred to Canada confirmed as Indian reserve in partial fulfillment of the Churchill Band and Northlands Bands outstanding treaty land entitlement. Negotiations with the Fox Lake Band regarding the selection of lands to partially fulfill its treaty land entitlement, have resulted in a formal request for lands at Bird. Negotiations with the York Factory Band at York Landing are in progress. Fourteen bands in Manitoba still have outstanding treaty land entitlement.

Flood claim settlements are still being negotiated between the affected bands and the Province and/or Manitoba Hydro. The areas concerned include lands referred to under the Fairford River System (Lake St. Martin), the Grand Rapids Forebay and the Northern Flood agreements. Statements of Claim have been filed against the Province by the Grand Rapids Forebay and Northern Flood Committee bands. The Northern Flood Committee is composed of the five bands affected by the Northern Flood Agreement, these being Cross Lake, Nelson House, Norway House, Split Lake and York Factory. Under the Agreement, the Nelson House Band has a hold area from which to select lands. The Cross Lake and Norway House bands' recent request for a joint hold area at Whiskey Jack Portage is under review. Lands at William Lake have been transferred to Canada for the Moose Lake Band and the Chemawawin Indian Band has identified the remainder of its land exchange at Denbeigh Point under the terms of the Grand Rapids Forebay Agreement.

A land exchange for the airstrip built on the Bloodvein Indian Reserve is under consideration. The Norway House Indian Band has agreed to a transfer of lands at Sea River Falls to finalize its airstrip land exchange. Lease or transfer arrangements are to replace land exchanges on other reserves where airstrips are constructed. Negotiations with the Oxford House Band concerning the acquisition of reserve land for airstrip purposes are nearing completion. Further progress is being made toward completing land exchanges for roads and non-treaty housing at Bloodvein. The transfer of road allowances at Buffalo Point (Reed River I.R. No. 36A) to Canada is complete.

Discussions are continuing with the Peguis Band regarding the Band's proposal to exchange reserve lands for an equal area of Crown lands and with The Pas Band concerning a land exchange involving dyke and road rights-of-way on reserve lands.

Wild Rice Program

During 1981/82, the Wild Rice Program continued an interim program while a consultant carried out a study of the industry. Leases expiring in 1981 were renewed for one year. The Indian company, Man-Omin-Ekay, which held 20 leases in the Nopiming area and 2 in the Whiteshell, discontinued operations early in 1981. The 22 leases were allocated to individual bands and the Whiteshell harvest was supervised and managed by the Department of Natural Resources.

A harvest of 205,359 kilograms of green wild rice was recorded for the 1981/82 fiscal year. The average price at Lakeside was \$3.44 per kilogram and royalty was waived for the 1981 harvest.

Local Government District Land Transfer Program

The return, sale to lessee and exchange of local government district lands administered in trust by the Province, has continued to be active and well received by the district councils and the farming public.

All nine local government districts have signed the Memoranda of Understanding and the agricultural agreement for administration of forage leases and haying permits.

A total of 7 land exchange agreements have received Orders-in-Council and 10 major land exchanges are in various stages of negotiation.

TRANSFERS AND EXCHANGES UNDER THE LGD LAND TRANSFER PROGRAM, 1981/82

(Value of land exchanged or transferred
included)

Transferred directly to LGD's	487 parcels
Transferred to purchasers	99 \$ 613,00
Crown land transferred to LGD's	90 655,700
LGD lands acquired by the Crown	115 650,900
TOTALS	791 \$1,919,600

Parks Branch

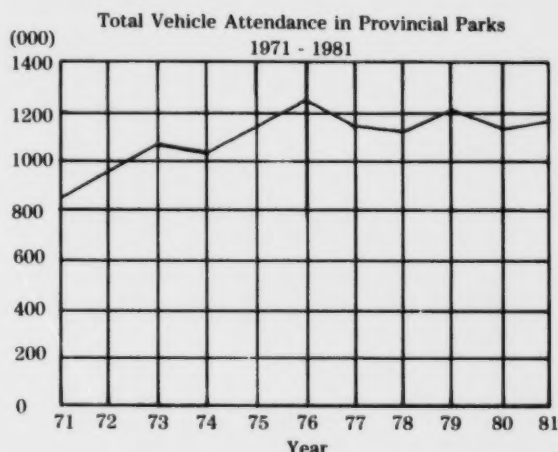
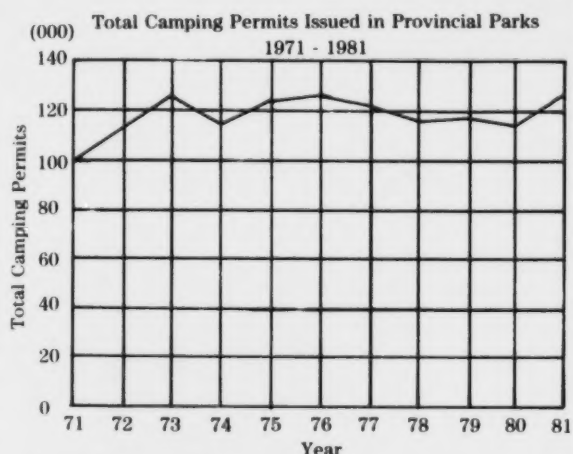
Parks Branch

Responsibilities:

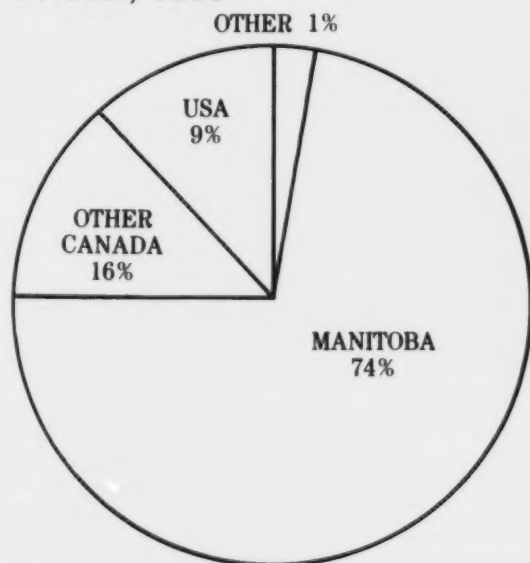
Manages a park system to provide for the conservation and management of wildlife and flora, for the preservation of cultural, ecological and other resources therein and to facilitate the enjoyment of outdoor recreational opportunities for Manitobans and visitors to Manitoba; evaluates public needs, park use and the capability of the park system and develops plans to meet the recreational needs of the public, including master plans for the orderly development of parks; plans and manages park visitor programs; administers the management of recreational businesses in parks; plans and manages special user programs.

Park Use and Development

In 1981/82 overall use of the province's parks increased. Parks located near urban centres and parks located in remote areas experienced the largest increases. The Parks Branch is responsible for managing 12 natural parks, 3 heritage parks, 44 recreational parks, 100 campgrounds and 107 wayside parks.



Origin of Camping Permit Holders, 1981



Key Indicators of Park Use, 1977 - 1981

Year	Vehicle Entries	Park Entrance Permits		Camping Volumes	
		Daily	Seasonal	Non-Seasonal Unit Days	Seasonal Permits
1977	1,151,978	133,087	47,698	206,038	761
1978	1,144,719	138,214	33,241	198,138	821
1979	1,190,266	144,069	33,448	202,088	850
1980**	1,119,557	131,582	29,351	202,088	868
1981*	1,135,946	145,024	29,496	218,065	1030

Includes no-charge permits and unit days:

** 1980 Senior Citizens 2070 permits 4210 unit days

* 1981 Senior Citizens 2975 permits 5978 unit days

1981 Introductory Passes 505 permits 505 unit days

Occupancy Data for Selected Campgrounds and All Campgrounds for 1981

Departmental Region — Campground	Number of Sites	*July Occupancy Rate (%)		Overall Occupancy Rate (%)	
		Weekend	Month	Weekend	Season
Southeastern Region					
Falcon Lake — Beach	292	100.0%	94.2%	59.9%	46.3%
West Hawk Lake	161	99.8	87.4	62.0	42.8
Eastern Region					
Birds Hill	533	137.3	77.3	63.7	37.1
Grand Beach	403	99.4	69.9	49.0	30.3
Interlake Region					
Gull Harbour	213	110.2	70.3	63.5	35.5
Southwestern Region					
Adam Lake	90	86.2	54.3	46.8	27.1
Kiche Manitou	121	165.0	105.5	105.7	58.2
Western Region					
Blue Lake	109	100.6	78.9	53.1	37.0
Northwestern Region					
Bakers Narrows	76	93.4	89.0	62.9	54.2
Northeastern Region					
Paint Lake	66	97.9	73.8	68.6	44.9
All Campgrounds	5104	84.2	58.2	50.7	31.4

* July has historically been the month with the highest occupancy % in most campgrounds. Occupancy on weekends is usually considerably higher than weekday occupancy. Weekend occupancy in July is therefore an indicator of "peak" campground use.

Park Revenue Summary for 1981

Park Use Fees	Fee	Number of Units (Users)	Total Revenue
1. Camping Permits			
- Unserved	\$4.00	244,668 days	\$ 706,911
- Electrical	5.00	88,377 days	260,972
- Fully-served	6.00	32,633 days	88,796
Sub-total		365,678 days	\$1,056,679
2. Park Entrance			
- Daily Entrance	1.50	145,498 days	218,247
- Seasonal Entrance	8.00	29,946 days	235,968
Sub-total		175,444 days	\$ 454,215
3. Games Area			
- Golf Course, Hecla Is.	-	20,972 days	100,280
- Golf Course, Falcon L.	-	29,449 days	133,924
Sub-total		50,421 days	\$ 234,204
- Ski tows, Falcon L.	-	-	-
- Ski tows, Springhill	-	-	-
Sub-total		-	-
- Other Games Areas (incl. miniature golf, lawn bowling and marinas)			31,060
Sub-total			\$ 265,264
4. Rental Fees & Misc.			
- Cottage Rentals			\$ 37,159
- Vacation Lot Rentals			677,412
- Commercial Revenue			170,022
- Lot Development Fees			94,505
- Misc. Fees			69,677
Grand Total			\$2,824,933

In addition to managing the province's parks, Parks Branch also manages 6520 vacation home lots. One hundred and fifty-five vacation home lots were allocated by public draw. These lots are located at Gronsdin Point, George Lake, Rocky Lake and in isolated areas within Paint Lake Provincial Park.

In response to increased interest in seasonal camping, 162 additional seasonal camping sites were established for allocation by public draw.

Two hundred and nineteen trailer village sites were occupied and administered during 1981 along with 1030 seasonal sites allocated through a public draw program.

Five hundred and fifteen special group users were issued park passes for entry into provincial parks. These special groups include school children, non-profit organizations and religious groups.

Development programs were undertaken to upgrade washroom and shower facilities, maintain various roads, and increase the number of electrically serviced campsites with sewage facilities to meet water quality requirements.

Most of these works were installed by the Engineering and Construction Branch. A new program was initiated to provide barrier-free access for disabled persons to washroom facilities in provincial parks.

Renovations were made to nine log cabins at Ironwood Point. These cabins were then opened for rental by the public as an additional family vacation service to Manitobans.

Numerous other projects to improve recreational areas in parks were undertaken at an approximate cost of \$3.5 million. New facilities were established at Beaudry, Spruce Woods and Paint Lake parks. Self-guiding and hiking trails were developed. New winter facilities were also provided. These included cross-country ski trails, warming huts and skating ponds.

New playground equipment was provided at Clearwater Lake, Bakers Narrows, Childs Lake, Toniata Beach, Spruce Woods and Rainbow Beach.

Visitor Services

The Visitor Services Section was reorganized during the year to place more emphasis on encouraging the public to make more use of provincial parks. Three major areas are being approached: commercial recreation, non-profit opportunities and public services; park visitor understanding and knowledge of the park system; and interpretive and visitor services programs and the production of a variety of products designed to increase the awareness and understanding of natural and cultural values within parks.

An estimated 125,000 park users were contacted during Visitor Services programs during 1981/82. A variety of live programs were offered to park users. In summer, numerous evening amphitheatre slide presentations, campfire talks and special events took place within provincial parks. An estimated 23,000 park users attended these events.

During the winter, Visitor Services at Birds Hill Park held three open houses. Spruce Woods offered weekend events including the official opening of their winter sports activity area.

Visitor centres were open at the Nutimik Museum, Alfred Hole Goose Sanctuary in the Whiteshell, Hecla and Spruce Woods Provincial parks. At Alf Hole Goose Sanctuary, a cooperative marsh management project was initiated with the production of a brochure and exhibits displayed at public showings.

Products developed to enhance visitors' experiences included self-guiding trails with interpretive on-site signs and pamphlets in three parks: Birds Hill, Whiteshell and Clearwater. On-site signs were designed for Bakers Narrows scenic tower; mine and townscape locations in Nopiming Provincial Park; Steels Ferry Overlook and the Newfoundland Ravine and Trail in Spruce Woods Provincial Park.

The publication *Spruce Woods Provincial Park* was printed and made available for sale to the public.

Personal contact programming included teacher in-services classes during winter and spring seasons. These were complemented with Outdoor Activity Program packages. Two thousand students were guided through Spruce Woods and 2500 toured Birds Hill. To alleviate increasing demands on personnel to guide students, two new projects were piloted. In Birds Hill, an environment study station with an information package was established. In Spruce Woods, an accreditation program was developed to qualify teachers to lead field trips unsupervised into the Bald Head Hills areas.

Recreational Businesses

Recreational businesses in provincial parks include hotels, motels, riding stables, stores, lodges, refreshment stands and marinas. Most commercial recreational services were initiated by private entrepreneurs, others were provided by the Parks Branch which arranged for their management on a fee-for-service basis.

Ninety-seven commercial recreational operations within provincial parks are administered by the Parks Branch. Those located outside parks are administered by the Lands Branch. Although many commercial operators continue to experience financial difficulties, this did not deter others from submitting proposals for the establishment of additional operations.

The Branch is also responsible for administering permits and leases respecting the use of provincial park lands by non-profit organizations.

Park Planning

Work on the preparation of master plans for the Whiteshell, Turtle Mountain and Grass River provincial parks continued. A draft of the Whiteshell plan was prepared after a full review by interested organizations and the public. Initial proposals for the Grass River and Turtle Mountain plans were presented for public review, revised and offered for the consideration of participants in the planning program.

In cooperation with Parks Canada, a pilot project was undertaken to study concepts for a heritage river system in Canada and case studies of the Bloodvein and Assiniboine rivers were completed. Parks Branch also contributed to an inter-departmental planning project to provide an overall land use plan for the area east of Lake Winnipeg. A plan to provide an approach for the establishment and development of parks throughout the province was initiated.

Parks in all regions of the province received upgrading of recreational facilities and plans for further improvements have been prepared. Cottage lot subdivisions were planned at Gronsden Point, Rocky Lake and George Lake and in isolated locations within Paint Lake Provincial Park.

One project undertaken to commemorate the 1981 United Nations International Year of the Disabled was the planning of comprehensive access and infrastructure facilities at the popular sport fishing site at the Portage Spillway Wayside Park located below the Portage Diversion on the Assiniboine River. In the future, more facilities will be designed to provide access for the disabled.

Resource Management

Interim management guidelines were prepared for Nopiming Provincial Park and the Bald Head Hills. These planning documents will guide park management and development initiatives in the absence of approved master plans. Other ongoing programs included management planning for Alf Hole Goose Sanctuary and field management programs for Spruce Woods agricultural land areas. Parks Branch was also active in a silviculture program which includes diseased tree removal and planting of new trees.

A joint effort between Forestry Branch and Parks was initiated to control forest leaf caterpillars, the growth of dwarf mistletoe and other forest pathogens in provincial parks. In cooperation with the Department of Agriculture, a program to control leafy spurge with a biological agent was implemented in Spruce Woods Provincial Park.

Parks and Wildlife Branch personnel embarked on a program to reduce deer-vehicle collisions and increase viewability of white-tailed deer in Birds Hill Provincial Park. The remnant tall grass prairie at Beaudry Provincial Park was brushed and burned as part of a management strategy for the park.

In order to safeguard natural resources within parks, while allowing resource harvesters to benefit from those resources, new management procedures were introduced. Some of these regulatory procedures provided for control on the use of pesticides and development of new management plans for harvesting wild rice.

Public Information and Marketing

In cooperation with the Public Information Section, 89 parks-related publications were printed and distributed through the parks system and other public institutions, and a variety of information was distributed through the media.

A marketing and promotion strategy was initiated to increase public use of parks and campgrounds. Nearly 4000 Introductory Camping Passes were distributed to the public free of charge and a province-wide parade float and display program reached an estimated 300,000 people.

Engineering and Construction Branch

Engineering and Construction Branch

Responsibilities:

Provides engineering, construction and technical support services to all branches of the Department, municipalities, conservation districts and other government agencies; provides accounting, administrative and purchasing services to the conservation districts; operates all flood control works under provincial jurisdiction during flood emergencies; and coordinates all flood fighting activities.

General

In order to function effectively as a service agency for the Department and other agencies, the Engineering and Construction Branch has been organized into three distinct components, Contracts and Administration, Regional Engineering Services and Technical Services.

The Contracts and Administration Section is required to maintain an effective expenditure control and cost reporting system related to all projects undertaken by the Branch on behalf of other agencies. All accounts for projects carried out by the Branch are processed by this section. Liaison is maintained with other branches to provide direction in policy and procedure matters regarding Branch activities. The Section administers all contracts and construction orders and conducts functions related to land acquisition for Department construction works.

The Regional Engineering Services Section delivers a variety of engineering services respecting the implementation of studies, programs and projects for the branches of the Department and other agencies.

The Technical Services Section provides design services, field consultation and technical guidance to the Regional Engineering Services Section and to other branches of the Department. These services include the preparation of engineering drawings, construction specifications and feasibility reports and studies.

Contracts and Administration

During the year 45 major contracts and construction orders were issued and administered. As a result of high interest rates and requirements of The Builder's Liens Act, all contracts were closely monitored to ensure that contractors were paid promptly, thus reducing interest charges on holdbacks payable by the Province. In addition, five consulting engineering firms were placed under contract to assist in feasibility studies and design work on Parks Branch and Water Resources Branch projects.

In 1981/82, 1500 hay permits were issued on 3000 kilometres of provincial waterways. About 1200 title searches were conducted in the preparation of right-of-way plans and land

purchases. Approximately 70 easements were processed governing telephone and hydro transmission facilities, and an additional 70 land transactions were carried out covering land purchases, legal survey requests and recording and dispatch of completed surveys. Nearly 90 consent-of-entry agreements were processed.

Inventories of materials from the Parks Branch at Birds Hill and Selkirk were transferred to the Engineering and Construction Branch. Stock counts at these yards as well as at 15 other yards around the province were taken.

Regional Engineering Services

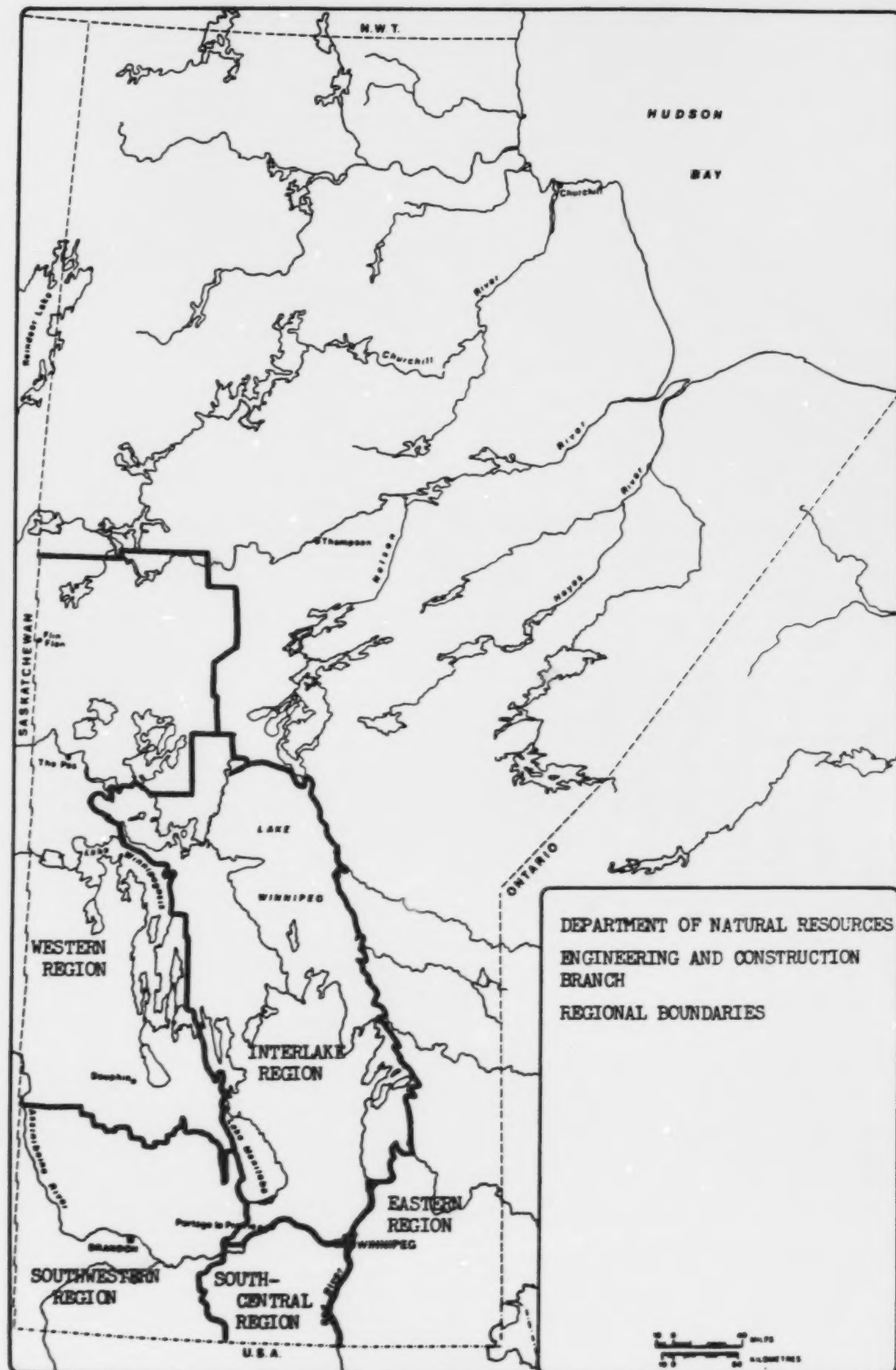
The province is divided into five regions. Each region is headed by a Regional Engineer supported by professional, technical and non-professional staff. The various programs and projects are delivered by in-house capability, contract, and by locally hired labour and equipment. A Construction Coordinator liaises with representatives of other branches and agencies to determine details of proposed programs and projects and coordinates regional engineering and design services to meet target dates. A Maintenance Coordinator is responsible for the establishment of standards and procedures for the operation of departmental engineering works and for the development of maintenance programs.

Following is a brief summary of activities undertaken in each region during 1981/82.

1) Eastern Region

Various surveys were conducted for the Cooks Creek Conservation District and the Water Resources Branch. In addition to maintenance work on provincial waterways and flood control works, the Branch replaced nine major drain crossings and reconstructed a portion of the South Lateral Drain.

A number of projects were conducted on behalf of the Parks Branch. Some of the major construction activities included the West Hawk Lake Lagoon, a parking lot and boat launch at Nutimik Lake, four wayside parks, two garbage disposal sites and one campground. The marina and parking lot at



Paint Lake was also upgraded. Four wells were built, several buildings erected and a number of campsites were electrified at a variety of locations. Various other projects included improvements to sewer and water systems, buildings, boat launch sites and other park facilities throughout the region.

A bridge over Rice River was built and the Rice River road was constructed from mile 10 to mile 18.5, all on behalf of the Forestry Branch. Twelve polar bear cages were built at Churchill at the request of the Wildlife Branch.

2) Interlake Region

During 1981/82, maintenance was carried out on provincial waterways and dams, including the maintenance and operation of the Assiniboine River Diversion. Engineering services were made available to the municipalities and local government districts in the region.

Major capital works were undertaken on the East Branch of Sturgeon Creek, the Swan Lake Drain and Ross Creek. A major repair project to the gates of the Assiniboine River Diversion Control Structure was completed. Five bridges were replaced in watersheds 26 and 29. Investigations and surveys were conducted for Buffalo Lake, Dennis Lake and the Gimli Flood Control study.

Parks Branch projects included improvements and additions to Norris Lake Wayside Park and upgrading of the main access road to Grindstone Park. New projects initiated were the construction of the Portage Spillway Wayside Park, campground electrification at Hecla and a beach erosion study at Winnipeg Beach.

Construction was completed on the Delta Channel project for the Wildlife Branch. Investigations were conducted concerning a new dam location in East Delta Marsh and an enclosure and associated infrastructure to serve a proposed wood bison re-establishment project at Waterhen Lake.

Services were also provided to the Department of Agriculture, Travel Manitoba and the Department of Energy and Mines.

3) South-central Region

Maintenance of provincial drainage works, provincial dams and the Red River Valley town dykes was carried out on behalf of Water Resources. Work under the General Development Agreement constituted a major activity in 1981/82. Contracts were awarded for the reconstruction of 16 kilometres of

the Domain Drain and the reconstruction of the Mills-Wheatland Drain, to be completed next year. Also, major repairs were made to the Stephenfield Dam spillway.

For Parks, work on a dock at Stephenfield Provincial Recreational Park and improvements to the water treatment plant at Norquay Beach were conducted. Services were also provided to the Department of Cultural Affairs and Historic Resources and the Department of Municipal Affairs.

4) Southwestern Region

Extensive repairs were made to the Gladstone Dam. Drainage programs for the Turtle Mountain and Whitemud River conservation districts were conducted as well as general maintenance of provincial waterways and dams.

A number of buildings were erected for the Parks Branch at Lynch Point Provincial Recreational Park, Spruce Woods Provincial Park and Camp Hughes Wayside Park. Also at Spruce Woods, the beach was upgraded and a sewage lagoon and forcemain was built. Road maintenance and/or construction projects were undertaken at Spruce Woods, George Lake and Turtle Mountain. Four wells were installed at Turtle Mountain and Spruce Woods. A sewer and water system was installed at the departmental staff residence at Max Lake.

5) Western Region

Activities under the provincial dams maintenance program included emergency repairs to the Ste. Rose du Lac dam and major repairs to the Upper Valley River dam. Provincial waterway reconstruction projects were undertaken on the South Bay Drain, Renwer Drain, Renicker Creek, Fishing River and the Pasquia project. Services were provided to the Turtle River and Alonsa conservation districts. An outlet control structure was constructed for Lonely Lake in the Alonsa Conservation District.

Parks Branch projects included electrification of campsites at Bakers Narrows, Wellman Lake and Asessippi campgrounds, construction of a washroom at East Blue Lake, major upgrading of sewage lagoon and treatment plant at Bakers Narrows, and the construction of three buildings at Rainbow Beach was started.

Technical Services

Technical Services provides a broad band of civil engineering services, both professional and paraprofessional, in designing projects and preparing the engineering drawings for these projects. Projects are initiated by the various resource branches through the Regional Engineers. As well, services are provided in the areas of geotechnical needs, specialized construction supervision, materials selection and in preparing specifications. Professional guidance, inspection and modification on maintenance problems of existing systems is also provided.

As well as dealing with project development, Technical Services conducts feasibility studies for resource branches to determine whether or not specific projects should proceed.

The Section possesses expertise in the fields of hydraulics, structures, sewer and water systems, geotechnology and materials. Services in hydrogeology and hydrology are available from the Water Resources Branch. Electrical and mechanical services are available on a retainer basis from the private sector, as is back-up for volume output.

During the year, the Section was involved in designing a variety of projects from polar bear cages in Churchill to a fishing pier designed to accommodate the disabled. Designs for floodways, dams and other water control works were routinely produced.

An example of Technical Services involvement in a typical project was the Domain Drain project. Armed with field survey data from Regional Engineering and design standards from Water Resources, the Section performed all hydraulic, geotechnical and structural design and prepared the contract drawings including right-of-way plans. Assistance was given to Regional Engineering Services in preparing the contract documents. Consultation and specialized supervision during construction were supplied as required. Similar services are provided to the other resource branches such as Wildlife, Fisheries and Forestry.

Feasibility studies are initiated directly by Technical Services or by the Regional Engineer. One example of such a study undertaken in 1981/82 was an examination of a proposal to replace the damaged dolphins at Gull Harbour. Preliminary structural design based on a geotechnical assessment was performed and a report including a cost estimate was prepared. This report will guide senior staff toward a decision on funding this project.

Regional Services Branch

Regional Services Branch

Responsibilities:

Enforces resource acts and regulations; carries out resource management programs and monitors their success at the field level; administers and operates provincial parks on a day-to-day basis; conducts wildfire suppression activities.

General

The Regional Services Branch delivers services and programs through park ranger and conservation officer services at a community level. Approximately 49 resource and 17 park offices are located throughout the 7 regions of the province.

The Branch, through the Legislative Officer, is responsible for preparing regulations under various statutes administered by the Department. During the year, 17 new regulations were prepared on behalf of other branches of the Department. Natural resource officers were kept well informed of any changes in regulations.

The Livestock Compensation Program is administered by the Regional Services Branch. Under this program, 22 claims were received with 11 being certified for payment. Payments totalled \$6300.

During 1981/82, the Branch introduced computerized programs to assist in the managing of records and field service activities. Of significance was the implementation of the natural resource officer activity and time analysis. In addition, the Branch introduced a computer-assisted program for use in analysis of compliance levels and evaluating the range and scope of demand for service by the public.

Special efforts were made to bring manpower to full strength at the field officer level. On-campus recruitment of natural resource officer candidates was undertaken at the Lethbridge Community College and Kelsey Institute in Saskatoon. Several experienced officers were recruited from other resource agencies in Canada in response to recruitment advertising.

A major thrust was undertaken to improve operational performance. The Branch directed effort toward improving financial management, problem identification, manpower management and, in particular, moving the fire management program from a reactive to a strategically managed service.

Improvement in the delivery of services within the provincial park system was given a high priority. Emphasis was placed on problems identified by patrons who responded to the annual user survey conducted in conjunction with the

Parks Branch. The Branch continued its effort to reduce rowdiness in parks, approaching the concern with a planned combination of prevention and control strategies. Survey response indicated strong support for the effort.

The Branch also operates a landscape nursery at Birds Hill to supply shrubs and other plants for landscaping in parks, golf courses, campgrounds and other Department facilities. Nearly 35,000 plants were produced and distributed to Department projects throughout the province during the year.

Enforcement

Night hunting was identified as a major resource management and enforcement problem. A considerable amount of officer effort was directed at attacking this problem, and with apparent success. The courts have consistently assessed higher penalties for night-lighting and this has helped in reducing the problem. The 226 prosecutions for night hunting in 1981/82 comprised about 25% of the total hunting prosecutions during the year.

A survey of sport anglers was continued during the first quarter of the fiscal year to determine compliance with regulations. Analysis of the data collected from nearly 23,000 sport fishermen revealed 96% of persons contacted were observing them.

Provincial park enforcement was directed toward general security and safety with special emphasis on liquor misuse and traffic problems. These problems were identified as a result of the park user survey. The Royal Canadian Mounted Police assistance in the program was much appreciated.

Natural resource officer promotion eligibility examinations were introduced during the year. The program was developed by a committee of rangers and conservation officers. The system is intended to evaluate officer knowledge as part of the overall evaluation of readiness for district level responsibilities.

The park ranger and conservation officer service took on a new look during the year with the introduction of a new uniform.

COMPARISON OF HUNTING* AND FISHING
PROSECUTIONS FROM 1972 TO 1981**

<u>Fiscal Year</u>	<u>Hunting Prosecutions</u>	<u>Fishing Prosecutions</u>
1972/73	496	246
1973/74	453	249
1974/75	373	367
1975/76	492	422
1976/77	463	315
1977/78	698	276
1978/79	804	321
1979/80	782	370
1980/81	438	446
1981/82	897	597

* Includes violations under The Wildlife Act
and The Migratory Birds Convention Act.

** Sport fish violations only are shown for
1980/81 and earlier.

SUMMARY OF THE MOST COMMON VIOLATIONS UNDER THE WILDLIFE ACT

<u>OFFENCE</u>	<u>Convict</u>	<u>Dismiss</u>	<u>Stay</u>	<u>Withdrawn</u>	<u>Adjourn</u>	<u>Total</u>
Night hunting	159	22	44	-	1	226
Loaded firearm in vehicle	127	2	14	-	1	144
Hunting out of season	61	3	23	2	-	89
Possess illegally taken wildlife	52	1	16	-	-	69
Hunting on private land without permission	26	4	22	-	-	52
Other	209	14	89	3	2	317
TOTAL:	634	46	208	5	4	897

FINES: \$76,570.25 COSTS: \$1,881.10 WRITTEN WARNINGS: 274

SUMMARY OF THE MOST COMMON VIOLATIONS UNDER THE LIQUOR CONTROL ACT*

<u>OFFENCE</u>	<u>Convict</u>	<u>Dismiss</u>	<u>Stay</u>	<u>Withdrawn</u>	<u>Adjourn</u>	<u>Total</u>
Unlawful possession of liquor	547	-	13	-	1	561
Unlawful possession by a minor	49	-	4	-	17	70
Sell, supply to minor	8	-	1	-	-	9
Other	5	-	-	-	-	5
TOTAL:	609	-	18	-	18	645

FINES: \$23,871.75 COSTS: \$1,326.59 WRITTEN WARNINGS: 95

* Only violations actioned by Department staff are listed; approximately 90% of these violations
occurred within provincial parklands.

SUMMARY OF THE MOST COMMON VIOLATIONS UNDER THE FISHERIES ACT

<u>SPORTFISH OFFENCES</u>	<u>Convict</u>	<u>Dismiss</u>	<u>Stay</u>	<u>Withdrawn</u>	<u>Adjourn</u>	<u>Total</u>
Sport fishing without licence	115	-	13	1	2	131
Angling with too many lines	84	1	2	-	1	88
Over possession limit	62	-	7	-	-	69
<u>COMMERCIAL OFFENCES</u>						
Failure to comply with permit conditions	14	1	12	-	-	27
Decayed fish	18	3	5	-	-	26
Commercial fishing without licence	12	-	2	-	-	14
<u>GENERAL OFFENCES</u>						
Fish/possess fish other than in accordance with Act, Regulation or permit	40	-	16	3	-	59
Fishing during closed season	40	-	-	-	-	40
Other	122	3	18	-	-	143
TOTAL:	507	88	75	4	3	597

FINES: \$27,825.00 COSTS: \$1,103.80 WRITTEN WARNINGS: 513

SUMMARY OF THE MOST COMMON VIOLATIONS UNDER THE HIGHWAY TRAFFIC ACT*

<u>OFFENCE</u>	<u>Convict</u>	<u>Dismiss</u>	<u>Stay</u>	<u>Withdrawn</u>	<u>Adjourn</u>	<u>Total</u>
Speeding	44	1	2	-	-	47
Unregistered motor vehicle	17	-	-	1	-	18
Driving while suspended	10	2	3	1	-	16
Impudent driving	4	2	7	1	-	14
Invalid drivers licence	10	-	2	-	-	12
Other	86	3	16	-	1	106
TOTAL:	171	8	30	3	1	213

FINES: \$6,257.75 COSTS: \$320.50 WRITTEN WARNINGS: 220

*Only violations actioned by Department staff are listed; approximately 90% of these violations occurred within provincial parklands.

SUMMARY OF THE MOST COMMON VIOLATIONS UNDER THE PARK LANDS ACT

<u>OFFENCE</u>	<u>Convict</u>	<u>Dismiss</u>	<u>Stay</u>	<u>Withdrawn</u>	<u>Adjourn</u>	<u>Total</u>
Unlawful parking	41	-	8	-	-	49
Creating disturbance/causing mischief	32	1	9	-	-	42
Setting fire without permit	26	-	-	-	-	26
Operate vehicle in prohibited area/manner	16	-	1	-	1	18
Possess/discharge firearm	8	-	6	-	1	15
Other	26	-	3	-	-	29
TOTAL:	149	1	27	-	2	179

FINES: \$5,834.50 COSTS: \$288.00 WRITTEN WARNINGS: 327

SUMMARY OF ALL PROSECUTIONS CONCLUDED BY REGIONAL SERVICES BRANCH

<u>Conviction</u>	<u>Dismissal</u>	<u>Stayed</u>	<u>Withdrawn</u>	<u>Adjourned</u>	<u>Non-Judicial</u>	<u>Total</u>
2,258	70	421	16	30	2	2,797
TOTAL FINES: \$152,758.50 TOTAL COSTS: \$5,764.49 TOTAL WARNINGS: 1,587						

DISTRICT OCCURRENCE REPORTS — REGIONAL SUMMARY* (Does not include problem wildlife occurrences)

REGION	WILDLIFE	PARKS	FISHERIES	FOREST	LIQUOR CONTROL	HIGHWAY TRAFFIC	FIRE PREVENTION	OTHERS	TOTAL
NORTHEAST	149	91	29	3	7	3	6	46	334
NORTHWEST	221	475	80	32	-	-	8	160	976
SOUTHEAST	813	157	51	10	-	-	11	-	1,042
SOUTHWEST	965	251	36	15	-	-	17	102	1,386
EASTERN	468	520	15	57	193	44	57	145	1,499
INTERLAKE	613	215	63	10	-	-	44	81	1,026
WESTERN	988	115	63	22	3	5	50	40	1,286
TOTAL:	4,217	1,824	337	149	203	52	193	574	7,549

*District occurrence reports document complaints, events and incidents directed from the public or through cooperating agencies. This assists in assessing the demand for service from the public. The reports also document events or incidents of significance that are observed or actioned by officers in the course of their duties that are not reported elsewhere.

Manitoba Hunter and Firearm Safety Program

During 1981/82, 4440 students graduated from Hunter and Firearm Safety courses conducted by volunteer instructors throughout the province. This brings the total of trained graduates since the program began in 1964 to 83,386. Seventy-three new instructors and 14 assistant instructors were trained and certified.

Bow hunter instructors trained and graduated 228 students bringing the total to 302 since the program began in 1980.

The Manitoba Hunter and Firearm Safety Program was awarded a Triple A rating award from the National Rifle Association of America and the International Association of Fish and Wildlife Agencies for the 1981/82 year. This is the highest award that can be accorded any program and one of only 10 that were awarded in North America in the field of hunter education.

In August of 1981 a training academy was held at the University of Brandon for volunteer instructors. This academy was a joint effort with the Province of Saskatchewan. Twenty instructors from each province attended this five day academy. The course contents included teaching techniques, the use of audiovisuals, hunter ethics, game management, survival and live firing instruction.

In October, a two day instructor training course was held at Frontier College in Cranberry Portage. This course certified 25 teachers from Indian communities throughout the north as hunter safety instructors.

Ten volunteer instructors were awarded 15-year plaques in appreciation of dedicated service to our program. This brings the total to 59 presentations of this award.

The 1981 Annual Firearm Accident Summary was prepared and distributed. There were 34 recorded firearm accidents in the province.

Problem Wildlife Services

The Department expanded its capability to help in disposing of problems experienced with wildlife. Because of a rabies hazard, special effort was directed toward the control of skunks in the city of Winnipeg and at Grand Beach and Birds Hill Provincial Park.

The annual Churchill polar bear program was carried out under the direction of Natural Resources and was considered a successful operation once more. Of interest was a film production of the program by National Geographic which featured the polar bear operation. It is scheduled for international television release.

PROBLEM WILDLIFE OCCURRENCES:

Regional Summary

REGION	DUCKS	BEARS	BEAVER	UNGULATES	OTHER	TOTAL
NORTHEAST	-	106	7	-	13	126
NORTHWEST	106	35	26	-	63	230
SOUTHEAST	54	84	100	46	336	620
SOUTHWEST	107	27	146	65	132	477
EASTF'N	-	127	29	-	101	257
INTERLAKE	2	70	89	45	89	295
WESTERN	65	55	249	40	13	382
TOTAL:	334	504	646	156	747	2387

Guide Training

During the year 112 guides received training in major guide training or upgrading courses for waterfowl guiding in seven Manitoba communities; four in northern Manitoba and three in central and southwestern locations. Annual guiding licences were issued to 617 guides while 77 achieved Registered Guide status. There are now 805 registered guides in the province.

Assistance was again provided to the Manitoba Professional Guide Association in the form of financial support for their annual convention held in Dauphin.

Training and Development Program

Under the guidance of the Branch Training Coordinator, 32 staff training courses were completed with a total of 629 participants.

One of the major courses was in advanced fire investigation and involved guest instructors from the State of California, Department of Forestry, Fire Investigation Services. This particular course was a major component of the overall Branch strategic approach to fire management.

The courses offered during the year addressed training needs in such matters as workplace safety and health, law enforcement, first aid, problem wildlife, small craft safety, explosives use and handling, communication skill development and confined entry training.

Fire Management and Communications

Fire Management

Fire Suppression —

Of the more than \$10 million spent on the fire management program, over \$7 million was expended on fire suppression. Nearly 49,000 man days were directly involved in fighting 662 fires.

The first fire of the season was reported on April 8th, and the last was declared officially out on September 28th. More than 376,000 hectares were burned, including 220,000 hectares of forested land.

The fire season was moderate in all areas of the province with the exception of the Northeast Region, where it was the worst experienced in recent years. Drought conditions prevailed all summer in the Lynn Lake, Pukatawagan and Thompson areas. In this region alone, 274 fires were recorded, accounting for 41% of all fires reported throughout the province during the year.

Fixed-wing aircraft acquired by contract for fire fighting included two Canadair CL-215 water-bombers, two Otters and two Turbo Beavers. Four Bell 206B and two Bell 204B helicopters were also hired. In total, nearly \$4 million was spent on contracting these aircraft.

The two contract Bell 204B helicopters were used in a new program called Helitac. Helitac was introduced as a part of the Branch plan to improve the quality and capability of early attack on fires. One helicopter was stationed at Bissett to cover the Lake Winnipeg East area and the other at Wekusko Falls, south of Snow Lake, to cover the Northwest Region.

The system proved quite valuable as fires actioned in this manner were suppressed while still small. The expansion of this program will be recommended for the Northeast Region and should greatly reduce the average fire size in future fire seasons.

Fire Detection —

The mainstay of fire detection in the province continues to be aerial patrols. The eight aircraft used in the program logged nearly 2300 hours of flying time at a cost of \$244,700. Lookout towers and ground patrols were used to supplement the aerial patrols in high value areas during times of high fire hazard.

Public cooperation was responsible for reporting 32% of all fires actioned.

Fire Prevention Education —

Approximately \$10,000 was spent on publicity to educate the general public in the prevention of wildfire in Manitoba's forests. The Manitoba Forestry Association camp at Hadashville experienced an increase in total attendance in 1981. Overall attendance at the camp since its inception is now nearly 144,000.

Two parade floats encouraging fire prevention participated in 25 rural fairs and anniversary parade celebrations throughout the province. Smokey Bear appeared in a number of these parades on the float. With the assistance of the natural resource officers and park rangers, Smokey also attended a number of children's programs in northern schools as well as participated in Parks interpretative programs.

Training —

Fire suppression training courses were held throughout the spring and summer for fire rangers, provincial staff, Firetac crews and personnel from the Department of Northern Affairs, the Canadian Armed Forces, Parks Canada, Abitibi-Price and local municipalities.

The first Annual FireTac Competition was staged in mid-August with representatives from four of the regions competing. The program was introduced as a means to improve the quality of fire suppression crews and to aid in developing incentives for participants to remain with this part-time program. A crew of native fire fighters from Bissett won championship honours.

Communications

The provincial communications network was expanded and now includes 13 dial-up and 21 conventional repeaters. This system continues to operate through cooperation with the Manitoba Telephone System.

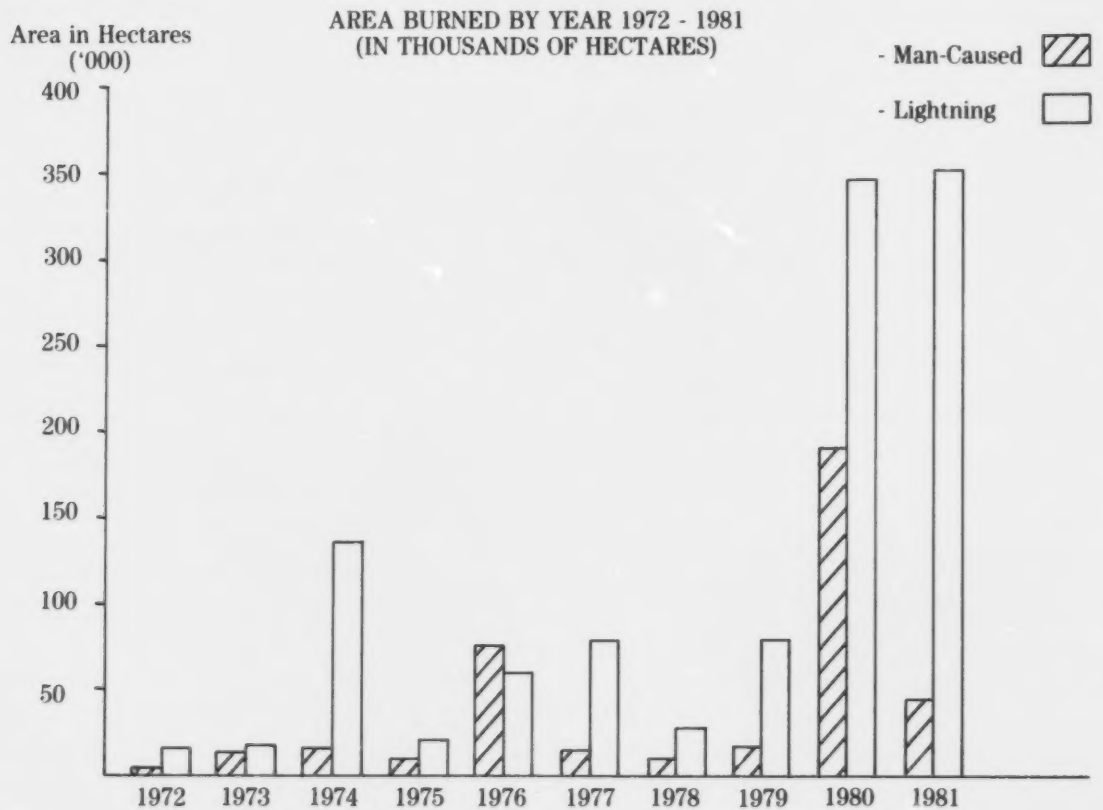
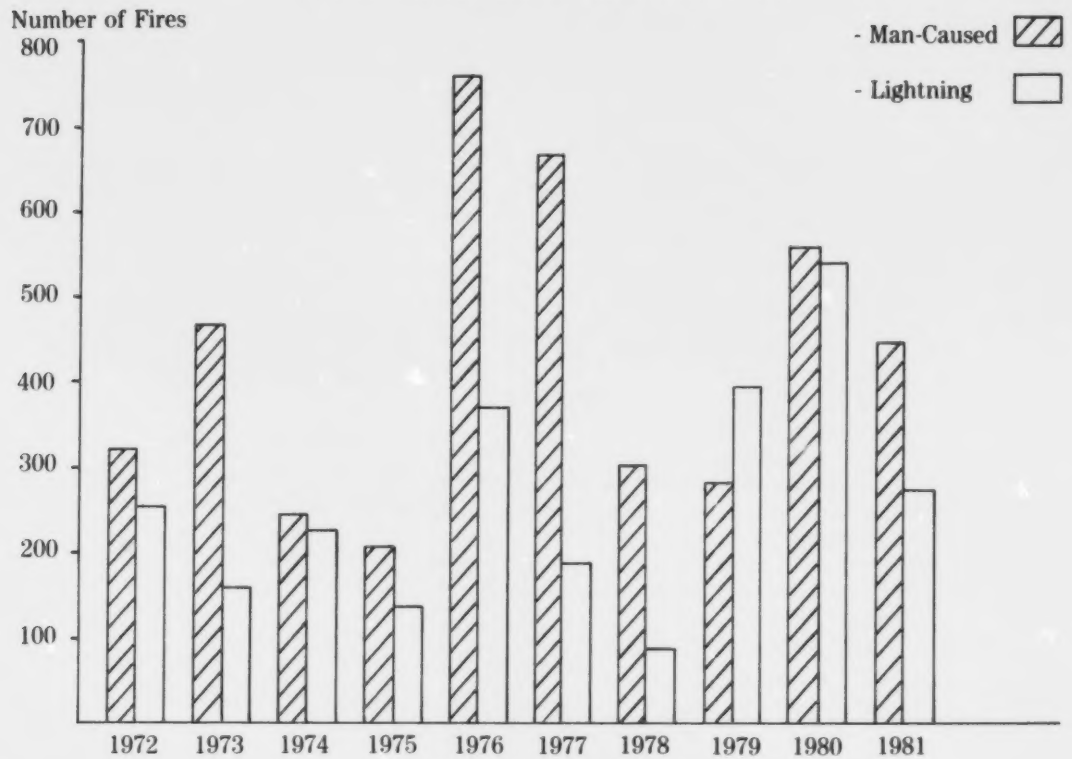
Acquisition of \$240,000 worth of radio equipment has greatly enhanced the radio communications at field level. However, further improvement is still required to improve the overall efficiency of the service.

The solar repeater previously installed at Nopiming Park has proven to be exceptionally reliable and continues to work efficiently.

CAUSES OF FIRES, AREA BURNED AND SUPPRESSION COSTS, 1981/82

Cause	Number of Fires	% of Total Fires	Area Burned (Hectares)	Suppression Costs
Man-Caused	—	—	—	—
Recreation	98	14.8%	208.4	\$ 145,819
Settlement	115	17.3%	5,617.5	190,353
Woods Worker	4	0.6%	162.1	86,268
Railways	8	1.2%	355.2	87,283
Other Industrial	12	1.8%	5,265.4	214,984
Public Projects	6	0.9%	329.1	90,819
Incendiary	125	18.8%	2,836.9	212,014
Miscellaneous	33	4.9%	1,906.4	91,058
Agriculture	29	4.3%	3,036.8	19,949
SUBTOTAL:	430	64.9%	19,717.8	1,138,547
Lightning	232	35.1%	356,502.8	6,189,171
TOTAL ALL FIRES:	662	100.0%	376,220.6	\$7,327,718

NUMBERS OF FIRES BY YEAR 1972 - 1981



Surveys and Mapping Branch



Surveys and Mapping Branch

Responsibilities

Administers The Surveys Act (Part II); provides legal land descriptions for disposition under The Crown Lands Act and The Mines Act; prepares Orders of the Minister for approval of municipal by-laws; maintains all provincial geographic names; conducts land surveys as required by government agencies; implements and maintains a provincial system of control surveys and compiles topographical mapping; compiles and prints maps and plans; maintains a map distribution system, air photo library and remote sensing centre.

Administration

The Branch continues to provide legal land descriptions and areas for the Agricultural Crown Land Sales Program and for the Local Government District Land Return and Exchange Program.

The Toponymy Unit, with the assistance of the Public Information Section, wrote and distributed a series of 15 newspaper articles to nearly 50 papers throughout the province during 1981/82. The articles described the history of place names in Manitoba and outlined the role the Department plays in assigning and researching place names. Public response was excellent and resulted in numerous requests for additional information. The Unit also checked and provided name data for 303 mapping manuscripts, prepared data for 74 name decisions and issued 23 original and 28 duplicate Commemorative Name Certificates.

Legal Surveys

One hundred and one Plans of Survey affecting Crown lands were examined for the approval of the Director of Surveys, representing a 42% increase over the previous year. Field work was completed for 83 survey projects, many of which were larger than normal. All surveys in excess of the annual production of the Branch's staff were contracted to private surveyors.

An integrated retracement survey program, related to the provincial township system, was implemented in conjunction with the Land Titles Office to create savings and increased efficiency for future users of surveying and mapping resources.

Control Surveys and Topographical Mapping

During the year, interim specifications were developed for use by government and private surveyors in surveying townships under The Special Surveys Act. This initiative will result in those townships becoming an integral part of a multi-purpose survey system. The Section continued with its program in south-central Manitoba of integrating the geodetic reference

framework with the land survey system, as a cooperative project with the federal topographical control survey program.

Base mapping under the Flood Damage Reduction Program was carried out in the communities of Lorette, Ste. Anne, Gimli, MacGregor, La Riviere, Rosenfeld and Gretna.

The medium scale 1:20,000 mapping data base covering a large portion of northern Manitoba was completed. Urgent mapping requirements at this scale and for this area can now be met within a three month time frame as compared to a previous delivery time of one to two years.

Administrative and technical support was provided to the Interdepartmental Committee on Aerial Photography and Photogrammetric Mapping. This committee is responsible for coordinating the acquisition of all provincial aerial photography and photogrammetric mapping to ensure multi-purpose use and to minimize duplication. Inspection of contract mapping and aerial photography was conducted to ensure adherence to specifications.

The ongoing program of establishing a computerized positional data file for provincial surveys greatly assisted the Section in responding to over 300 requests for technical information and assistance from government and industry.

Geographic Mapping Section

This Section provided mapping for resource, boundary and land disposition purposes, including new maps, overprints on existing maps and revisions to regular publications. A total of 279 (270)* single and full color projects were completed, including 30 Crown land map overprints, 74 (37) official boundary maps and 143 (161) miscellaneous projects such as custom art work, pamphlets and public information brochures for various agencies and departments.

The drafting unit prepared 152 (69) line and photobase plans of legal surveys and described boundaries, of which 77 (22) were wild rice lease plans. Additional projects included preparation of 12 (1) certified township mosaics for wildlife enforcement and endorsement of

revisions and supplementary data on 176 (183) legal plans.

The photomechanical unit provided a full range of photographic services in response to requests from the Geographic and Topographic Mapping Units, the Map Distribution and Remote Sensing Section and other government departments and agencies.

*Previous years' totals in parentheses.

Map Distribution and Remote Sensing

The Map Sales and Air Photo Library continued their participation in promotional exhibits and as a result realized an increase in sales, with service to approximately 11,000 customers. Revenue increased by 45% in 1981/82 from \$86,900 in 1980/81 to \$125,700. Map sales outlets were set up in regional government offices in Brandon, Dauphin, The Pas and Thompson to better service regional customers.

A 16 mm microfilm retrieval system for 750,000 aerial photographs was put into operation in the Air Photo Library. The system allows rapid and automatic perusal of the photo imagery and is primarily designed for customers wishing to conduct their own photo search.

The Remote Sensing Centre participated in the 7th Canadian Symposium on Remote Sensing, held in Winnipeg in September. The Centre carried out several projects including preliminary mapping of deer habitat in southwestern Manitoba, leafy spurge distribution mapping in Spruce Woods Provincial Park and Canadian Forces Base Shilo and two land use studies in south-central Manitoba.

Approximately 7774 line kilometres of supplementary aerial photography were flown by the Centre's 70 mm camera service. The main users of this service were the Municipal Assessment and Municipal Planning branches of the Department of Municipal Affairs and the Forestry Branch of this Department.

Water Resources Branch

Water Resources Branch

Responsibilities:

Provides short and long-term planning for the management and development of water resources in Manitoba; plans and develops the construction and maintenance programs for provincial water control works; conducts studies and investigations related to the management and use of the water resources in the province; administers a number of water-related Acts of Legislature, including The Water Rights Act and The Water Power Act; provides engineering services to municipal councils and conservation district boards.

Water Licensing

A) Water Rights

During the fiscal year 156 applications for the right to use, divert or impound water were received. Six complaints were received regarding interference with water supplies or alleged violations of the Water Rights Act. There were 149 initial inspections and numerous follow-up inspections, particularly in regard to aquifer pumping tests, interference with water supplies and alleged violations of the Act.

Licences issued during the fiscal year numbered 82. Of these, 11 authorized the impoundment of water by a dam or dams, 47 authorized the diversion of surface water and 24 authorized the diversion of groundwater. The uses authorized by the licences were as follows: domestic use, including stockwatering, 3; municipal, 2; industrial, 9; irrigation, 54; waterfowl conservation, 7; wild rice production, 3; other, 4.

For each water rights application an office evaluation was made followed by a site inspection. In the case of groundwater use requests, aquifer pump tests were carried out by the applicants and evaluated by the section. The section also reviewed engineering plans provided by the applicants for dam projects to ensure they met acceptable standards.

The Minister had requested the Manitoba Water Commission to conduct a general review of groundwater management in the province and make recommendations regarding management policies and practices related to groundwater use. A report was completed in September of 1981. It recommended significant revisions to The Water Rights Act and preparation of regulations thereunder.

Improved policies and procedures were developed during the year for dealing with the administration of groundwater rights, particularly within the Assiniboine Delta aquifer.

Policies and procedures are being established for dealing with the agricultural subsurface tile drainage systems. Two types of systems are

being used. The first is the drainage of low-lying areas where soil conditions are such that groundwater in the area is not affected. Several of these projects have been authorized. The second involves the diversion of ground water from unconfined aquifers in the wet sands area and resulting in the lowering of water levels. A number of these undertakings are being reviewed and monitored prior to being licensed. Before being licensed it must be shown that there will be no significant adverse effect on nearby water users and on long-term water levels in the aquifer.

B) Permits and Approvals

1) Waterway Opening Investigations

During 1981/82, 44 bridges and 1,081 culverts through or adjacent to provincial roads or trunk highways were assessed to determine their hydraulic adequacy.

2) Crown Land Use Investigations

A total of 318 requests for use of 980 parcels of Crown land were investigated during the fiscal year. The proposed use was recommended for approval if the parcel was not subject to flooding or erosion, with the exception of water lots. Lands located within water power reserves and affected by water power licences were also reviewed relative to present or future water power requirements.

Sixteen requests were investigated pertaining to the removal of water power reserves from Crown lands. The reserves were established under The Water Power Act and must be withdrawn before the lands can be dealt with under The Crown Lands Act. In addition, investigations were made regarding 29 requests for temporary use of Crown lands and 10 requests to purchase Crown lands within power reserves. There were 3 requests for water lots and 20 requests for the use of Crown lands within power reserves such as reservations, community boundaries, subdivisions, exchanges and transfers.

One request for the removal of Crown land from the operation of a water power licence was investigated. In addition, six requests for temporary use and one request for purchase of Crown lands within the operation of licences were investigated. There were five requests for the use of Crown lands within the operation of licences such as reservations, sub-divisions, exchanges and transfers.

The Section also investigated requests concerning proposed Crown land use outside of water power reserves and outside of the operation of water power licences. There were 23 requests covering 423 locations for the proposed sale of Crown lands for agricultural purposes, 6 requests covering 221 locations for transfer under the Local Government District Land Transfer Program, and 59 requests covering 76 locations for purchase of Crown lands for other purposes. In addition, 106 requests pertaining to general permit or miscellaneous lease applications for the temporary use of Crown lands were investigated. There were also 33 requests for the use of Crown lands such as reservations, easements, community boundaries and subdivisions.

3) Red River Valley Designated Flood Area

The Red River Valley Designated Flood Area Program continued during the fiscal year and a total of 67 Designated Flood Area Permits were processed and issued. The permits stipulate that the finished main level for new construction or reconstruction of existing buildings must be built at or above the level of the 100 year flood plus 0.9 metres.

4) Hydroelectric Power Generation

Manitoba's water power development to December 31, 1981 is as follows:

Work continued on replacement of the concrete surface on the spillway structure at the Slave Falls Generating Station. At the Great Falls Generating Station all the civil works for the construction of the new spillway and the east and west non-overflow dams were completed. The blasting and removal of the old overflow and non-overflow dams and the removal of the old spillway superstructure were also completed. Four spillway gates with associated structures and equipment were fabricated and installed.

Unit No. 7 transformer at the Kettle Rapids Generating Station was completely rebuilt.

An amount totalling \$10,198,346.39 for 1981 water power rentals, storage charges and land rentals was collected from Manitoba Hydro and Winnipeg Hydro. During the 1981 calendar year, hydroelectric power production in Manitoba totalled 17,990,688,340 kilowatt hours, a decrease of about 6.2% over the previous year. Rentals collected on the 1981 water power output totalled \$9,618,206.00, an increase of 32.0% over the previous year. Although power production decreased between 1980 and 1981, the reason for the increase in rentals was due to the fact that the annual water power rental rates were increased effective June 1, 1980. Storage charges amounting to \$117,658.01 were collected from the water power producers. These charges represent the portions of the maintenance and operating costs of the Lake of the Woods and Lac Seul storages chargeable to power developments in Manitoba. The amount paid by Manitoba to Canada in connection with these storages was \$117,658.01. The third item in the total of \$10,198,346.39 consisted of land rentals associated with water power production. Land rentals amounting to \$462,482.38 were collected from Manitoba Hydro and Winnipeg Hydro.

Manitoba's water power development to December 31, 1981 is as follows:

Owner	River	Plant Name	Normal Head in Feet	Installed Capacity in Horsepower	
				Present	Ultimate
City of Winnipeg	Winnipeg	Pointe du Bois	46	105,000	105,000
City of Winnipeg	Winnipeg	Slave Falls	30	96,000	96,000
Manitoba Hydro	Winnipeg	Seven Sisters	61	200,000	200,000
Manitoba Hydro	Winnipeg	Great Falls	56	168,000	168,000
Manitoba Hydro	Winnipeg	Pine Falls	37	114,000	114,000
Manitoba Hydro	Winnipeg	McArthur	23	80,000	80,000
Prov. of Manitoba	Kanuchuan	Kanuchuan	18	1,900	5,700
Manitoba Hydro	Laurie	No. 1 Site	55	7,000	7,000
Manitoba Hydro	Laurie	No. 2 Site	55	7,000	7,000
Manitoba Hydro	Nelson	Jenpeg	24	224,000	224,000
Manitoba Hydro	Nelson	Kelsey	50	294,000	420,000
Manitoba Hydro	Nelson	Kettle	98.5	1,680,000	1,680,000
Manitoba Hydro	Nelson	Long Spruce	80	1,350,000	1,350,000
Manitoba Hydro	Saskatchewan	Grand Rapids	125	600,000	600,000
TOTAL				4,926,900	5,056,700

5) Water Supply for Existing Power Developments

Winnipeg River — During the 1981 calendar year the flow on the Winnipeg River at Slave Falls averaged 52 m³/s or 61.7% of the long-term average flow.

Lake of the Woods — Lake levels on Lake of the Woods were maintained within the approved range of 321.9 m to 323.5 m. Levels reached a low of 321.91 m in March and peaked at 322.82 m in July. Outflow from the lake varied from 438 m³/s in January to 101 m³/s in May.

Lac Seul — The normal range of regulation for Lac Seul is between 353.0 m and 357.2 m. The lake level reached a low of 354.24 m in March, then rose to a maximum of 355.81 m in August. Outflow from the lake varied from 293 m³/s in January to 1 m³/s in June and July. The Lake St. Joseph Diversion was operated at an average flow of 52.1 m³/s during 1981.

Nelson River — Flows on the Nelson River at the Kelsey Generating Station averaged 1560 m³/s during 1981, which was 62.9% of the long-term average flow.

Saskatchewan River — The mean flow of the Saskatchewan River at the Grand Rapids Generating Station during 1981 was 521 m³/s or 65.5% of the long-term average.

Undeveloped Water Power in Manitoba

Continuous Horsepower Available at 88 Percent Efficiency

River	95% of Time	50% of Time
Berens	7,000	23,000
Burntwood	528,200*	686,600*
Churchill	138,000	186,000*
Gods	35,000	58,000
Grass	7,000	26,000
Hayes	3,000	12,000
Kanuchuan	16,000	26,000
Laurie	2,000	3,000
Nelson	2,435,700**	4,077,900**
Pigeon	21,000	54,000
Seal	165,000	466,000
TOTAL *	3,357,900	5,618,500

*With Churchill River Diversion

**With Churchill River Diversion and Lake Winnipeg Regulation

- * The above figures represent the amount of power which could be available continuously on the indicated bases, and do not include developed or undeveloped power available at the Jenpeg, Kelsey, Kettle, and Long Spruce sites on the Nelson River, at

Kanuchuan on the Kanuchuan River or at Sites No. 1 and No. 2 on the Laurie River. If fully developed, the total installed capacity of the above rivers would considerably exceed the above figures.

6) Undeveloped Water Power in Manitoba

The undeveloped water power resources in Manitoba are estimated to be slightly more than 3.3 million continuous horsepower at 95% flow. The major water power rivers are located in the northern part of the Province.

Water Management

A) Water Development Planning

1) Plum Lakes

The RM of Sifton has requested that the Province improve the outlet capacity of Plum Creek to provide lower levels on the Plum Lakes. Several interest groups have objected to any further such work in the area and have expressed interest in the formation of a comprehensive water management scheme. Terms of reference for a study of the Plum Lakes have been provided to the Manitoba Water Commission.

2) Pelican Lake Regulation

Recreational interests have been seeking enhanced regulation of Pelican Lake levels by means of a diversion from the Pembina River and an improved outlet channel. The cost of the required works was estimated and discussions of this project with the councils of the municipalities bordering Pelican Lake is proposed.

3) Rock Lake

In response to requests by cottage owners in the Rock Lake area, a number of schemes for raising the water level of Rock Lake have been investigated by the Water Resources Branch. Studies indicate that raising the water level will not improve the algae problem or improve water quality. The benefits of raising the level are not sufficient to justify the cost of building a new control structure, acquiring the necessary land and carrying out the mitigation works that would be required.

4) Lizard Lake

Local farmers in the Lizard Lake area are seeking authorization to lower water levels in Lizard Lake to enhance hay production in the area. The request of the local farmers is in direct conflict with plans proposed by Ducks Unlimited which would cause the lake to be regulated at a higher elevation in order to enhance wildlife production.

Hydrological studies have been completed by the Department to determine the effect of various control schemes on lake elevations. The results of these studies were made available to Ducks Unlimited in July, 1981. No agreement has been reached on how best to satisfy both parties.

5) Dauphin Lake

Over the years, numerous attempts have been made to regulate the level of Lake Dauphin to accommodate the various users of the lake and surrounding area. The present range of levels, like previous ranges on record, does not meet with the approval of the entire community. Two groups, the Concerned Citizens to Save Dauphin Lake and the Lake Dauphin Farmers Association are attempting to reach agreement on an acceptable range.

The Water Development Planning Section completed a study in October, 1981 which determined the impacts and mitigation costs of raising the range of regulation from 260.0m-260.3m to 260.3m-260.6m.

6) Fairford Dam

Studies undertaken by the Water Development Planning Section have indicated that it is not always possible to operate the Fairford Dam at optimum discharges for fisheries without allowing the Lake Manitoba level to drop below its current range of regulation.

The Fairford Dam is used to maintain Lake Manitoba between 247.15m and 247.76m. The current target level is 247.55m. Although a lower target level would result in additional native hayland being available to area farmers in an average year, the social and economic values of the lake for recreation, fish and wildlife would be reduced. It has been shown that a minimum September to October flow of $19.8\text{m}^3/\text{s}$ through the Fairford Dam is needed to

accommodate the migration of spawning whitefish from Lake Winnipeg to Lake St. Martin. Flows of this magnitude are also required during the fall and winter to maintain the effectiveness of the Dauphin River hatchery. Funds are now available and arrangements are being made to install a fishway in the Fairford Dam.

7) Dennis Lake Detention Basin

A recent interdisciplinary study has recommended the construction of an improved outlet and control structure at a cost of \$2.1 million to regulate Dennis Lake at elevation 266.4m. Ducks Unlimited has indicated that it is prepared to share in the costs of the outlet channel provided that the water level is controlled at that elevation. The Local Government District of Armstrong is strongly in favour of an operating level of 265.8m. The proposal to operate to 266.8m has recently been submitted to the Department of Agriculture for comment. No agreement has yet been reached on how best to satisfy agricultural and wildlife interests.

8) Rice Lake

Rice Lake is a major source of water for the town of Bissett. In the spring of 1981, the Water Development Planning Section conducted a study into the feasibility of constructing a permanent dam at the outlet of the lake that would stabilize lake levels. In the fall of 1981, it was decided that the least expensive alternative would be to raise and widen the existing dam and construct a spillway. The estimated cost was \$40,000.

9) Reservoir Regulation

Lake Manitoba — during 1981, the level of Lake Manitoba rose from 247.36m in April to 247.55m in July and gradually receded to 247.37m in December. The flow at the Fairford Dam was reduced to $20\text{m}^3/\text{s}$ in April and then to $14\text{m}^3/\text{s}$ in September where it was maintained during the winter.

Shellmouth Dam — Lake of the Prairies filled to an elevation of 426.38m by June 14 from its early April low of 425.11m. Because of the variable conditions outflow was reduced to $0.7\text{m}^3/\text{s}$ in April and maintained until September after which flows were increased to $5\text{m}^3/\text{s}$. In late October the flow was increased to $7\text{m}^3/\text{s}$ followed by increases

in November to $8\text{m}^3/\text{s}$ and in December to $9\text{m}^3/\text{s}$. Reductions in outflow were made during the winter to a low of $1.4\text{m}^3/\text{s}$ by late March. The elevation of Lake of the Prairies at the end of March, 1982 was 424.39m. elevation of Lake of the Prairies at the end of March, 1982 was 424.39m.

Other — the spring runoff was inadequate to replenish all storage reservoirs. The Goudney Reservoir at Pilot Mound and the Deloraine, Russell, Elgin and Manitou reservoirs were filled to within 0.1m of the spillway crests. Kenton and Pleasant Valley reservoirs were 0.6m and 0.3m below their respective full supply levels. Four reservoirs which did fill to crest level were Jackson Lake, Lake Irwin (Neepawa), Stephenfield Lake and Lake Minnewasta (Morden).

During the summer months, releases from the Stephenfield Lake and Lake Irwin were made to satisfy riparian needs along the Boyne and Whitemud rivers respectively.

B) Intergovernmental Surface Water Investigations

1) Cumberland Lake Project

The Province of Saskatchewan is preparing a report outlining the effects on Manitoba of raising the level of Cumberland Lake. The report will be submitted to this Province. The Branch arranged an informational meeting in The Pas on October 6, 1981 to acquaint local residents with the project.

2) Overflowing River

Low flows on the Overflowing River in Manitoba have adversely affected fishing and trapping activities. An investigation by the Water Development Planning Section revealed that low levels were partly the result of low inflows and partly because of the operation of the Ducks Unlimited Leaf Lake Dam in Saskatchewan. Ducks Unlimited has agreed to keep the Branch informed on the operation of this dam. In addition, this problem has been referred to the Prairie Provinces Water Board.

3) Rural Municipality of Russell Drainage

The rural municipalities of Russell and Shellmouth have claimed that drainage works in Saskatchewan have resulted in flooding problems in Manitoba. This problem has been referred to The Prairie Provinces Water Board. A study is underway.

4) Pipestone Creek

A study aimed at reaching a solution to water shortages along Pipestone Creek has been initiated under the Canada-Manitoba Interim Subsidiary Agreement on Water Development for Regional Economic Expansion and Drought Proofing. As part of this overall study, the Water Development Planning Section is determining the extent and location of existing and projected demands for water along the creek.

The Water Resources Branch and Saskatchewan Department of the Environment have formed an ad hoc committee to study water supply problems along Pipestone Creek. The committee is to establish an interim procedure to ensure that necessary monitoring of supply and demand along the creek is carried out and that the pattern of flow releases from Saskatchewan into Manitoba is equitable.

5) Prairie Provinces Water Board

The Board is conducting a water demand study of the Saskatchewan-Nelson Basin. The study will document present and historic uses of water in the prairie provinces. Data collection and analysis of the Manitoba municipal/industrial component of the study was completed by the Water Development Planning Section and the report is nearing completion.

6) Hidden Island Coulee

One branch of the Hidden Island Coulee in North Dakota has been blocked resulting in the diversion of additional flows into the most westerly branch of the coulee. This will bring increased flooding along this channel in Manitoba. The Branch has been pressing the North Dakota State Water Commission to remove this dam since September, 1981. The Commission is taking steps to resolve the problem.

7) Pasquia Polder 3

Previous drainage reclamation works by PFRA and the Province in the northern part of the Pasquia Settlement have developed about 22,000 hectares of land for agriculture. The local agricultural community at The Pas has recently expressed interest in extending the development to the southern part of the settlement. In response, a joint study was

undertaken in 1981 by the Department of Natural Resources, the Department of Agriculture, and PFRA. A progress report has indicated that drainage of Pasquia Lake for intensive agricultural cropping would be both practical and economically viable. Further studies are required to determine the impacts on wildlife and on the PFRA pasture in the Big Lake area. As well, further studies are required before the feasibility of drainage works in the Big Lake area can be determined.

8) Garrison Diversion Unit

Alternatives to, and variations of the authorized Garrison Diversion Plan continue to be developed by the United States Bureau of Reclamation. This Department is continuing to monitor proceedings with respect to the implementation of this project.

9) Pembilier Dam

Canada would gain some benefits from the construction of the Pembilier Dam in North Dakota. In response to a request from the U.S. Army Corps of Engineers, an update of Canadian benefits attributable to the dam has been initiated.

10) Roseau River

The objective of the International Roseau River Study, completed in 1975, was to determine the impacts that a proposed flood control project in Minnesota would have on the people and the environment in both Canada and the United States and to develop a basin-wide plan for the Roseau River and its tributaries. Modifications to the original plan were presented by the U.S. Army Corps of Engineers in June, 1980 and in September, 1981. These reports were reviewed by the Branch and it was concluded that the current selected project is essentially the same as the project reviewed by the International Joint Commission in 1975.

11) Aux Marais and Walhalla South Branch Buffalo Lake Boundary Problem

Farming groups in North Dakota whose lands drain into Manitoba have been seeking improved drainage service. Manitoba has asked that the project proposed by the international engineering group be considered in conjunction with the proposed Pembilier Dam as these drainage improvements would

aggravate the flooding problem in Manitoba if overflows from the Pembina River were allowed to continue.

C) Conservation Districts

1) Conservation Districts Authority

The Conservation Districts Authority was established by Order-in-Council 201/78 to provide for the administration and control of provincial grant funds to the conservation districts. These funds are provided to deal with such matters as drainage, flood control, soil conservation, water conservation, recreation and wildlife management.

The grant funds provided to the five districts during the 1981/82 fiscal year were as follows:

Whitemud Watershed	
Conservation District	\$ 677,610.74
Turtle River Watershed	
Conservation District	422,027.73
Turtle Mountain Conservation	
District	149,937.02
Alonsa Conservation District	119,260.57
Cooks Creek Conservation District	153,820.33
Administrative costs of	
maintaining the Conservation	
Districts Authority	2,506.50
Miscellaneous grants	35,180.44
TOTAL	\$1,558,343.33

2) Whitemud Watershed Conservation District

In the Willowbend Creek (Rat Creek) Watershed, a detailed land and water management study was initiated. This will provide a long-term conservation and development plan for the orderly management of land and water resources in the watershed. A study which examined the feasibility of irrigation in the watershed was concluded. An agricultural report on the land use recommendations and associated land management practices was completed.

A study was finalized which examined the feasibility of a proposed double dyked floodway along the Big Grass River between Waldersee and the Big Grass Marsh. The project would deal with periodic overflows which have caused severe crop and erosion damages on adjacent agricultural lands.

3) Turtle River Watershed Conservation District

The feasibility of flood protection for the Village of Ste. Rose du Lac is being investigated under the Canada-Manitoba Flood Damage Reduction Program.

A study on the regulation of water levels on Beaver Dam Lake was completed.

4) Turtle Mountain Conservation District

The Conservation District has received approval to construct a flood water retention structure in the headwaters of Medora Creek. Engineering studies on the proposed structure have been completed. A report on the climatology of the District has been finalized.

5) Alonsa Conservation District

Reports on agriculture, fisheries and wildlife in the Alonsa Conservation District have been completed. A surface water management plan for the District should be concluded in the spring of 1982.

6) Cooks Creek Conservation District

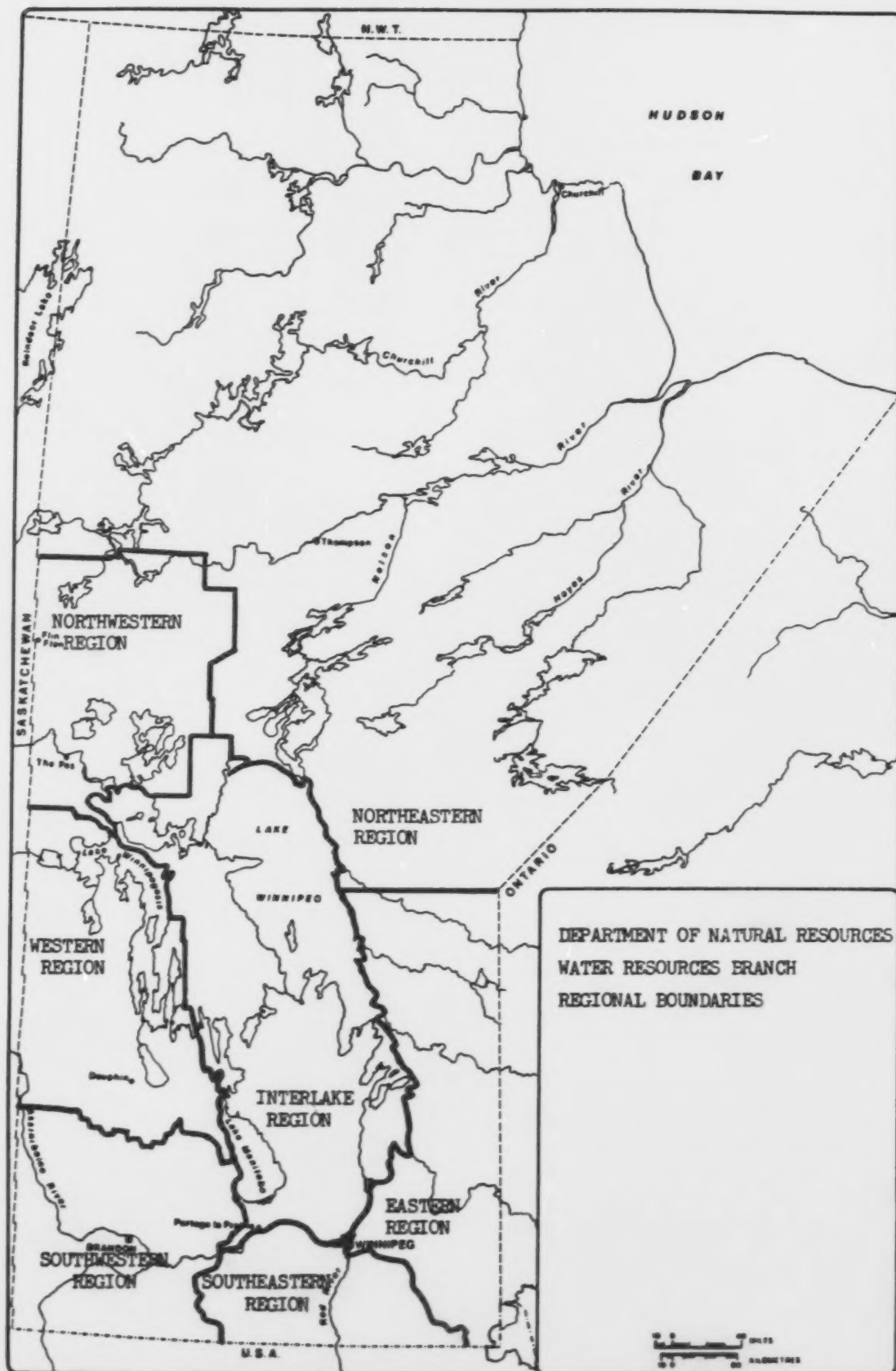
The Branch is assimilating all pertinent resource, social and economic data for the Cooks Creek Conservation District for use in the preparation of a resource management scheme. A study of the groundwater resources in the District and seven feasibility studies involving drainage improvement have been completed.

7) Provincial Flood Damage Reduction

Through the application of Provincial Land Use Policy No. 11, the Province attempts to control development in areas subject to flooding, erosion, bank instability, landslides and subsidence. During 1981/82, approximately 950 subdivision applications were reviewed, input was provided for 12 planning documents and 13 draft planning documents were reviewed. In addition, individuals were advised on known and potential flood and erosion hazards.

D) Water Control Works

The Water Control Works Section establishes and monitors design, construction and maintenance standards for water control works. The actual construction is carried out on behalf of the Water Resources Branch by the Engineering and Construction Branch, and is monitored by the Regional Water Manager. There are seven regions. However, the Eastern and Northeastern regions have been combined under one Regional Water Manager as have the Western and Northwestern regions. The other regions are Interlake, Southeastern and Southwestern.



REGIONAL SUMMARY OF WATER CONTROL WORKS CONDUCTED, 1981/82

INTERLAKE REGION

Flood Damage Reduction

Location	Cost
Assiniboine River Diversion	\$163,507.97
Lake Winnipeg Dykes	17,491.12
Fairford Dam	585.70

Land Drainage Maintenance

Watershed	Location	Cost
#25	Long Lake Drain	\$ 33,876.89
#26	Sturgeon Creek & Adjacent Area	86,836.18
#27	Grassmere Creek Drain	86,761.75
#28	Parks Creek	15,938.90
#29	Wavey Creek	41,282.83
#30	Netley Creek	57,069.76
#31E	Eastern Lower Interlake Area	50,055.44
#31W	Western Interlake Area	4,994.66
#32	Icelandic River	62,440.21
#33	Fisher River	54,891.85
#34	R.M. of Siglunes & R.M. of Eriksdale	32,636.44
#100	Part of Assiniboine River	7,476.24
#106	Washow Bay & Adjacent Area	32,531.38
#108	North Shoal Lake & Adjacent Area	5,150.02
#109	West Shoal Lake & Adjacent Area	2,448.31
#111	Goodison Lake (Birch Lake) & Adjacent Area	11,298.26
#112	Gypsumville Area	2,629.44
Watersheds — Various — Appraisal Fees and Miscellaneous R.O.W. Costs		18,374.03

Land Drainage Reconstruction

Watershed	Location	Cost
#26	East Branch Sturgeon Creek	\$147,789.02
#30	Ross Creek	27,983.17
#31W	Swan Lake Drain	68,155.44
#33	Kilkenny Drain	13,001.00
	Pliska Drain & Pliska Drain Lateral	23,671.00
#111	Dog Hung Creek	9,785.00
#112	Lake St. Martin	41,974.79

Water Allocation

	Cost
Operation and Maintenance of Provincial Dams	837.60

Bridge Replacement

Watershed	Location	Cost
#26	E. Branch Colony Creek E32-11-2E	\$16,000.00
	E. Branch Colony Creek E32-11-2E	7,011.82
#29	Wavey Creek N25-14-2E	54,070.23
	Wavey Creek N23-15-3E	2,870.50
	Stollar's Drain NE2-15-2E	9,680.15

EASTERN/NORTHEASTERN REGION

FLOOD DAMAGE REDUCTION

Location	Cost
Red River Floodway Operation & Maintenance	\$101,573.20

LAND DRAINAGE MAINTENANCE

Watershed	Location	Cost
9	Lower Seine River	\$ 932.86
10	Brokenhead River	81,314.80
12	Bunns Creek	826.77
13	Devils Creek	32,597.80
14	Catfish Creek	109,479.20
83	Lower Whitemouth River	2,424.20
96	Lac du Bonnet Area	32,114.40
	Miscellaneous R.O.W. Carry-Over Costs	1,080.86

WATER ALLOCATION

Location	Cost
Operation & Maintenance of Provincial Dams	\$ 2,633.96

BRIDGE REPLACEMENT

Watershed	Location	Cost
10	Bear Creek In 14-13-8E	\$ 12,061.60
13	Devils Creek E29-14-6E	34,510.03
13	Devils Creek NE21-13-6E	34,061.31

SOUTHEASTERN REGION

FLOOD DAMAGE REDUCTION

Location	Cost
Red River Valley Town Dykes	\$ 78,915.25

LAND DRAINAGE MAINTENANCE

Watershed	Location	Cost
2	Lower Roseau River	\$ 59,725.62
4	Lower Rat River	17,519.65
5	Marsh River	12,719.83
6	Tourond Creek & St. Adolphe Coulee	84,304.28
7	Manning Canal	39,426.76
8	Seine River Diversion	81,218.33
9	Lower Seine River	21,522.75
15	Riviere Aux Marais and Plum River	150,133.04
16	Shannon Creek	48,860.30
17	Tobacco Creek	66,118.84
18	Norquay Channel	80,518.97
19	Upper Morris River	18,340.74
20	King Drain	24,191.12
21	Elm Creek Channel	42,006.53
22	Lower La Salle River	31,503.72
23	Central La Salle River	48,280.21
24	Upper La Salle River	40,565.09
54	Mary Jane Creek	5,027.53
87	Upper Roseau River	28,091.38
	Watersheds — Various — Appraisal Fees and Miscellaneous R.O.W. Costs	10,648.69

LAND DRAINAGE RECONSTRUCTION

Watershed	Location	Cost
7	South Lateral Drain	\$526,179.72
16	Shannon Creek System	681,724.55
21	Upper Elm Creek Channel	117,468.52
22	Domain Drain	412,809.53
22	Mills-Wheatland Drain	78,947.53
23	Bryson Drain	43,331.83

WATER ALLOCATION

Location	Cost
Operation and Maintenance of Provincial Dams	\$ 35,955.11
Maintenance Yards	49,381.08
Stephenfield Lake	232,615.47
Lake Minnewasta	1,226,269.44

BRIDGE REPLACEMENT

Watershed	Location	Cost
2	Vita Drain NE 17-2-8E	\$ 35,537.13
4	Joubert Creek Extension NE 2-4-7E	9,250.31
6	Tourond Creek N 15-7-3E	14,238.47
6	Tourond Creek N 25-5-5E	37,819.02
6	Tourond Creek NE 35-6-4E	11,245.74
8	Youville Drain NE 1-8-5E	9,763.82
15	Plum River N 15-3-1E	104,409.36
15	Hespeler Drain NE 27-3-1W	37,651.65
16	South Shannon Creek E 36-4-2W	61,060.62
17	4N Dykes E 11-6-4W	819.79
23	Codnor Drain N 27-8-2W	15,218.39
23	Menard Drain N 4-9-3W	5,242.27
23	Menard Drain NE 6-9-2W	4,661.82
87	Pine Creek Diversion NE 7-1-12E	31,031.32

VALUE ADDED CROPS PRODUCTION AGREEMENT

Location	Cost
Domain Drain Crop Area	\$412,809.53
La Salle River Area	122,279.36

SOUTHWESTERN REGION

LAND DRAINAGE MAINTENANCE

Location	Cost
Various watersheds	\$ 26,815.05

WATER ALLOCATION

Location	Cost
Maintenance of Provincial Dams	\$ 29,328.77

WESTERN/NORTHWESTERN REGION

FLOOD DAMAGE REDUCTION

Location	Cost
Shellmouth Dam	\$ 5,363.60

LAND DRAINAGE MAINTENANCE

Watershed	Location	Cost
47	Vermilion River & Edwards Creek	\$ 78,702.45
48	Wilson River	8,984.08
49	Fishing River & Mink Creek	32,865.34
52	Lower Roaring River & Favel River	3,741.61
53	Lower Swan River & Sinclair River	32,238.01
61	Upper Swan River & Lobstick Creek	38,357.67
89	Upper Woody River	7,321.94
90	Lower Woody River	27,291.79
95	Lower Valley River	40,941.92
97	Bell River	6,600.22
102	Fork River	45,210.24
103	Garland River	5,671.46
104	Pine River	57,684.87
105	Slater River & Duck River	7,341.43
107	Hamlin Drain	11,263.36
114	Pasquia River Watershed	123,772.19
	Appraisal Fees and Miscellaneous R.O.W. Costs	21,782.17

LAND DRAINAGE RECONSTRUCTION

Watershed	Location	Cost
48	Renicker Creek	\$ 21,754.21
49	Fishing River	213,567.27
58	Renwer Drain	9,171.67
61	Upper Swan River & Lobstick Creek	49,929.85
102	Fork River	109,677.14
114	Pasquia River Watershed	25,145.32
114	Pasquia River Dyke	55,006.32

WATER ALLOCATION

Location	Cost
Operation and Maintenance of Provincial Dams	\$ 99,928.20
Maintenance of Summerberry Marsh	27,246.85
Maintenance of Grace Lake Dykes	9,108.18

BRIDGE REPLACEMENT

Watershed	Location	Cost
47	Durston Drain N 7-24-19W	\$ 33,423.54
47	Salt Creek E 27-25-19W	28,335.54
95	Harrington Drain NE 25-26-20W	13,033.55
95	Zoria Drain N 28-27-21W	14,882.78
104	Pine River Drain N 33-32-22W	7,540.63

Regional Water Management

The Regional Water Manager represents the Branch in the regions and provides liaison with local governments, agencies and private individuals. The manager reviews representations and requests for services from local governments, agencies and individuals and is responsible for provision of these services. Liaison with regional staff of other branches and departments is also provided. Representation on, or association with, local boards, communities, and other bodies is provided, such as provincial coordinator for conservation districts.

The Regional Water Manager provides a means by which local interests and concerns are conveyed to the Water Resources Branch, as well as a means by which government policies in the water resources area are conveyed to the region, in particular to local governments.

The Regional Water Manager develops, in consultation with the Engineering and Construction Branch, yearly operation and maintenance programs on provincial waterways, dams and other Water Resources Branch facilities, and also provides the major input into the development of yearly and long range capital construction projects. The Regional Water Manager provides regional authority for, and monitors, the yearly maintenance and construction programs which are carried out under work order by the Engineering and Construction Branch.

Water Investigations

A) Hydrology

1) Flow Forecasting and Hydrometric Monitoring

Few flow forecasts were prepared during the spring of 1981 due to the light spring runoff and the absence of a flood threat. Throughout the spring and summer, inflow forecasts were prepared for various lakes and reservoirs with control structures operated by Manitoba. Streamflow forecasts were prepared where low river levels were a concern.

In early November 1981, a soil moisture survey was conducted in the basins of the Red, Assiniboine and Souris rivers in Manitoba and Saskatchewan. The survey indicated that soil moisture was somewhat above normal in most parts of these watersheds, except in extreme southwestern Manitoba where it was below normal. An antecedent precipitation index was computed based on data from May to October, 1981. This index

was above the average in all but the extreme southwestern and northern parts of Manitoba.

In February and March, 1982, snow surveys were conducted and winter precipitation data were analysed in southern Manitoba and in eastern Saskatchewan. Results showed that snow cover and winter precipitation were well below average in all areas except in southeastern Saskatchewan where they were above average.

During February and March, spring flood outlooks were prepared for the Red, Assiniboine and Souris river basins.

Flow forecasting procedures for the Red River were extended to allow forecast preparation for a variety of forecast dates. The second draft of reports on rainfall and snowmelt inflow forecasting procedures for Lake of the Prairies were written. Data files required for flow forecasting were updated.

During the year, financial and technical assistance was provided to the federal government for the operation of 308 hydrometric stations. In addition 102 stations were operated by the Branch for runoff monitoring and for the operation of provincially owned water control structures.

2) Wilson Creek

At the end of September, the data collection program at the Wilson Creek Experimental Watershed was concluded. The Headwater Control Committee prepared the first draft of a summary report on the Wilson Creek Experimental Watershed Study, 1957-1982.

3) Hydrometric, Hydrologic and Hydrometeorological Information

Precipitation maps were prepared each month and distributed within the Department and to selected government agencies. Isohyetal analyses of storm precipitation were also prepared following each significant storm.

Current data on water levels and streamflows for 31 lakes and 29 rivers in Manitoba were compiled and distributed weekly to several hundred users within the public and private sectors. Information pertaining to climatology and hydrology was supplied to users on request.

4) Canada — United States Joint Prairie Snow Cover Study

The feasibility and accuracy of aerial measurement of snow water content using passive microwave and airborne gamma ray techniques was tested during the year under review. The Hydrology Section provided technical staff to perform special snow and soil moisture surveys for the experiment. It also coordinated the laboratory analysis of all the soil samples obtained by the various agencies participating in the exercise.

B) Groundwater

1) Groundwater Regulation

Under the provisions of The Groundwater and Water Well Act, licences were issued to water well contractors to drill water wells in Manitoba. Liaison with each licensed contractor was maintained to ensure that all water wells were constructed in accordance with the provisions of the Act and to provide technical advice in cases where difficulties were encountered in the completion of individual wells.

2) Groundwater Exploration, Development and Water Treatment Services

Several government departments and agencies have programs that require the development and maintenance of water supply facilities for municipal and domestic use. At the request of these departments groundwater exploration, development and water treatment investigations were carried out for a number of projects. The greatest demand for these services came from the Manitoba Water Services Board and the community well programs of the Department of Agriculture.

3) Groundwater Development Investigations

The major groundwater development investigation underway during the year dealt with the control of groundwater discharge in the South Lateral agricultural drainage system at New Bothwell which has in the past been plagued with severe icing problems. A system of relief wells was evaluated as a method of providing permanent control of the undesirable groundwater discharge in the watershed. Investigations were also undertaken to evaluate individual flowing well problems, the most significant of which was a private well in the RM of Daly near Rivers.

4) Groundwater Management Investigations

Groundwater Management Investigations were underway in areas where intensive development has taken place such as near Winnipeg, Selkirk, Winkler, Carberry and Oak Lake. Each area has been established as an aquifer management area. In each aquifer management area monitoring stations have been established to provide a continuous record of changes in water levels and water quality. The major activity during the year was the construction and instrumentation of monitoring stations in the Carberry and Oak Lake areas. Some time was also spent on evaluating the aquifer conditions in the Selkirk and Winnipeg areas.

5) Groundwater Inventory

All groundwater data generated by water well contractors, groundwater investigations and groundwater monitoring stations were converted to a permanent storage and retrieval system maintained by the Groundwater Section. Plans and charts outlining the resource conditions were continuously updated to show the present and historical situation. Groundwater pollution hazard and groundwater availability appraisals were made on a continuing basis in response to requests from other government agencies. Background reports and groundwater development plans were prepared in response to several requests from the Department of Municipal Affairs. In addition, information was provided upon request to water well contractors, engineering consultants and private landowners.

6) Subsidiary Agreement on Value-Added Crops Production

The staff of the Groundwater Section supervised the Managing Groundwater Levels in Sandy Soils Project and the Wilson Creek Groundwater Management Project under the terms of the Subsidiary Agreement on Value-Added Crops Production.

Canada-Manitoba Flood Damage Reduction Program

The governments of Canada and Manitoba signed three agreements on December 20, 1976 with the aim of reducing over the long term the ever-increasing potential for flood damages in Manitoba. These were the General Agreement, a Flood Risk Mapping Agreement and a Flood Damage Reduction Studies Agreement. In March of 1981, an Agreement Respecting Flood Forecasting was also signed.

Under the Flood Risk Mapping Agreement, a flood risk area was designated along the Assiniboine River in the vicinity of Brandon on March 26, 1982. A comprehensive public information program was conducted prior to and following the designations. Maps were produced and distributed to the general public and to numerous government agencies. Meetings were held with the local governments and the general public. Aerial photographs were taken of the flood risk area on designation day to provide a permanent record of buildings in existence on the date of designation.

Base maps were completed for Dauphin, Gimli, Grande Pointe, Gretna, Lorette, MacGregor, Minnedosa, Neepawa, Ochre River, Rosenfeld, Ste. Anne, Ste. Rose du Lac, Starbuck and Swan River. Preparation of base maps is underway for Arborg, Fisher Branch, Gladstone, La Riviere, Riverton, Westbourne, The Pas and Woodside.

River channel cross-sections for Arborg, Fisher Branch, Gladstone, MacGregor, Minnedosa, Ochre River, Riverton, Swan River and Westbourne were undertaken. Cross-section surveys were completed for La Riviere and were underway for Lorette, Ste. Anne, The Pas and Virden.

Hydrologic studies were carried out for Dauphin, Morden, Starbuck and Swan River. Hydraulic studies were undertaken for Brandon, La Salle and Sanford and studies for Dauphin, Morden, Starbuck and Swan River were underway. Studies for Ste. Rose du Lac were initiated. For Carman, the study re-assessing the results of the earlier hydraulic study was undertaken by a consultant.

Pre-designation meetings were held with the local councils of Carman, Dauphin, La Salle, Lorette, Morden, Sanford, Starbuck and Swan River. A display depicting approved methods of floodproofing was part of "Home Expressions '82" from March 17 to 21, 1982 at the Winnipeg Convention Centre. The display was designed and prepared by the Public Information Section of this Department.

Under the Flood Damage Reduction Studies Program, a geotechnical study of the existing dykes in Brandon was completed. Questionnaires intended to provide information on past flood damages were distributed to residents of Gimli and Ste. Rose du Lac. The information obtained from the questionnaires was of considerable value in subsequent benefit-cost evaluations.

The examination of the feasibility of upgrading the existing dykes in Brandon is underway as is a similar study on dykes in Ste. Rose du Lac. The flood damage reduction study of Souris was completed with the recommendation to upgrade the dyke around the water treatment plant. A preliminary study examining the proposed diversion around Gimli was undertaken.

The Province initiated negotiations for a cost-sharing agreement with the federal government under the Flood Damage Reduction Program for the upgrading of the ring-dykes of eight communities in the Red River Valley. The eight communities are Emerson, Letellier, Dominion City, St. Jean Baptiste, Morris, Rosenort, Brunkild and St. Adolphe.

Under the Flood Forecasting Agreement, a Flood Forecasting Centre was established within the Water Resources Branch. Work on the pilot project began in September, 1981.

During the year under review, physiographic features of the Boyne River Watershed including land use, soil characteristics, slope, drainage and channel cross-sections were obtained and delineated. Climatological and hydrometric data pertinent to the watershed were also collected and organized. Instrumentation for four real-time hydrometeorological data stations was selected and ordered. Leading runoff models were closely examined for the purpose of selecting which models should be tested in detail under the pilot project.

Canada-Manitoba Subsidiary Agreement on Value-added Crop Production

This federal-provincial agreement, signed in April 1979, encourages the growing of value-added crops which may be processed in Manitoba, and the efficient production of red meats. Value-added crops are crops that would lead to the development or expansion of secondary industry, such as processing. The Water Resources Branch is involved in investigating and implementing measures, primarily drainage works, to remove constraints to the production of value-added crops.

In the Almasippi Wet Sands Area, along the foot of the Manitoba escarpment, the University of Manitoba conducted extensive field crop trials to establish relationships between crop yields and water table levels. The I.D. Engineering Company conducted investigations to develop water management plans for a typical project area southwest of Portage la Prairie.

The Domain Drain Area Crop Demonstration Project will provide improved drainage to approximately 8000 hectares of cropland. The project, located south of Winnipeg, is intended as a demonstration of the methods of optimizing productivity by judicious drainage system development. Construction of the major drainage works associated with the project is nearly complete. The Domain Drain and the Manness Drain watersheds, located adjacent to each other, have been instrumented with several standard rain gauges, a recording rain gauge and two stream gauges. While the Domain Drain area will have improved drainage, the Manness Drain area will remain unchanged and act as a control for the study.

The data provided by the instruments will demonstrate the effects of drainage installation and land use on the runoff regime.

Drainage system improvement studies are underway in the Cooks Creek, Marsh River, La Salle River and Morris River areas. Together these project areas total 140,000 hectares of cropland. All studies except the Cooks Creek project will be completed in 1984.

All groundwater data collected for the Wilson Creek watershed are being compiled and reviewed in an attempt to better understand the escarpment groundwater system. Erosion control studies continued in the Wilson Creek watershed. A study has been initiated to establish the impact of tile drainage on groundwater in a typical sandy soil under irrigation in the sub-escarpment region.

Interim Subsidiary Agreement on Water Development

The Interim Subsidiary Agreement on Water Development for Regional Economic Expansion and Drought Proofing was signed by Canada and Manitoba in May of 1980. The agreement was initiated under the General Development Agreement. Two types of programs are conducted under the agreement: A) water management activities to develop a long term strategy for water development and drought proofing, and B) water supply projects.

A) Water Management Activities

1) Investigations

a) La Salle River Flow Enhancement

The concept of transferring water from the Assiniboine River to the La Salle River basin was studied. PFRA prepared cost estimates for various diversion alternatives covering both gravity and pumped diversion. Consultants were engaged to evaluate the economics of these alternatives and to assess the environmental implications thereof. On the basis of these studies, it was concluded that diversion of up to 1.4 m³/s is economically justified for the near-term future (10 years). Such diversion would enable existing basic needs to be met and also would provide farmers wishing to expand their irrigation acreages an opportunity to do so.

b) Assiniboine South - Hespeler Project

This project would result in water being diverted from the Assiniboine River into the Assiniboine South - Hespeler area for agricultural and municipal/industrial uses. A large storage reservoir would be constructed on the Assiniboine River near Holland, a pumping plant near Rathwell to raise the water to the top of the river valley and a diversion canal following the base of the Manitoba escarpment in a southeasterly direction. Water would be released from the canal to easterly-flowing water courses as required. The Prairie Farm Rehabilitation Administration has carried out a preliminary cost update for the project and is presently conducting a more detailed examination. Consultants were retained to carry out a preliminary analysis of the economics of the project and concluded that overall benefits could exceed costs by approximately two to one. In addition, a study was launched to identify possible socio-economic and bio-physical impacts of this project.

2) Water Resource Development

An investigation to define the availability of groundwater in the Turtle Mountain Conservation District has been conducted. The data base to produce a series of maps defining aquifers in the Virden map sheet area has been prepared and a

field testing program to provide an adequate data base to define aquifers in the Hecla map sheet area has been planned.

Groundwater monitoring stations were established in aquifer management units at Elie, Winkler, Miami, Glenora, Carberry and Oak Lake.

Plans are being made to assess the feasibility of enhancing an existing aquifer by means of artificial recharge using surface water. Suitable conditions exist for such a test at a grave laquifer near Elie which is presently the sole source of water for the village.

B. Water Supply Projects

Under the program, three water supply projects were designated for early construction. The Morden Dam was raised and the spillway reconstructed at a cost of approximately \$2.3 million. Minor cleanup work will be completed by 1982/83. The rehabilitation of the Edwards Creek water storage facilities and construction of a water supply dugout at Grandview are scheduled to begin in 1982.

A study relating to the water supply problems along Pipestone Creek in Manitoba has been initiated. Investigations pertaining to water source development were carried out for the communities of Altona, McAuley and Pine River. An investigation into the provision of a firm water supply for the town of Morris was begun.

Wildlife Branch

Wildlife Branch

Responsibilities:

Develops and implements management programs designed to ensure that the resource is passed on to future Manitobans in at least as vigorous a state as it was received by the present generation; delivers programs that provide for the subsistence, commercial and recreational use of the wildlife resource; implements programs to alleviate wildlife damage to people and property; promotes the use of wildlife for scientific and educational purposes.

Wildlife Harvesting

A. Trapping

Fur production by Manitoba's 17,000 trappers decreased from \$7.6 million to \$5.5 million in 1981/82. The decrease, attributed to a slow freeze-up and weak fur markets, greatly affected the harvest of the two most important furbearers — beaver and muskrat. Discouraged by the drop in fur prices, many trappers did not take part in the spring harvest.

Fur management programs carried out in 1981/82 were a continuation of activities initiated the previous year. An interim agreement with the federal Department of Indian Affairs and Northern Development provided funding which enabled Branch staff to complete fur policy consultation meetings with trapper groups and continue delivery of trapline development projects. This funding also enabled staff to maintain trapline officer services in several remote communities.

Manitoba continued to take a lead role in furthering the development of humane

traps and trapping techniques. In this regard, Branch staff coordinated a national effort to form the Canada Fur Institute — an organization designed to continue the research of the former Federal-Provincial Committee for Humane Trapping. At a provincial level the Branch continued to test new traps and expand educational programs to ensure that new trapping methods are passed on to trappers.

Fur staff continued to deliver the trapping component of the Special ARDA Program. Twelve trapping equipment grants were provided to various local fur councils. Also, staff provided information and advisory assistance as requested by Manitoba Hydro for their trapline compensation program.

A grant of \$30,000 was provided to the Manitoba Registered Trappers Association to assist them in defraying administrative and operating costs. The Association expanded trapper services this year by implementing a fur pick-up service to encourage trappers to ship furs direct to auction and increase their returns.

NUMBER OF OPEN AREA AND REGISTERED TRAPPERS AND THE ESTIMATED VALUE OF MANITOBA WILD FUR PRODUCTION FOR THE 12 MONTH PERIOD ENDING AUGUST 31*.

Year	Open Area	Registered Trapplines	Total
	Licences Sold	Licences Sold	Production Value
1972/73	5,910	2,584	\$3,633,937
1973/74	5,885	2,223	2,779,102
1974/75	6,280	2,334	2,583,230
1975/76	6,492	2,680	4,248,272
1976/77	8,602	2,879	5,528,268
1977/78	8,379	2,975	5,047,377
1978/79	10,040	3,238	7,882,404
1979/80	12,809	3,627	9,615,604
1980/81	13,327	3,425	8,240,619
1981/82	13,072	3,187	5,564,491

*For 1981/82, the Departmental Fur Year was changed to the 12 month period ending August 31. The information for all other years is based on the 12 month period ending September 30.

QUANTITY PRODUCED, AVERAGE PELT PRICE, VALUE OF PRODUCTION AND
PROVINCIAL ROYALTY PAID BY SPECIES FOR THE YEAR ENDING AUGUST 31, 1982

Species	Quantity	Average Price	Value	Approximate % of Total Value	Royalty Per Pelt	Royalty
Badger	520	\$ 48.00	\$ 24,960	.5%	\$.01	\$ 5
Bear	381	37.65	14,345	.3%	.05	19
Beaver	34,133	17.56	599,375	10.8%	.75	25,600
Coyote	7,438	79.16	588,792	10.6%	.50	3,719
Ermine	9,881	2.00	19,762	.4%	.05	494
Fisher	3,121	155.00	483,755	8.7%	1.00	3,121
Fox, Blue	1	41.70	42	.0%	.25	0
Fox, Cross	1,216	112.35	136,618	2.5%	.25	304
Fox, Red	13,411	63.00	844,893	15.2%	.25	3,353
Fox, Silver	298	60.00	17,880	.3%	.25	75
Fox, White	105	41.70	4,379	.1%	.75	79
Lynx & Bobcat	4,347	306.00	1,330,182	23.9%	.50	2,174
Marten	3,561	39.16	139,449	2.5%	.50	1,781
Mink	14,952	34.50	515,844	9.3%	1.00	14,952
Muskrat	145,219	3.05	442,918	8.0%	.05	7,261
Otter	2,098	44.00	92,312	1.7%	1.25	2,623
Rabbit, Jack	73	0	0	.0%	.02	1
Raccoon	4,313	29.30	126,371	2.3%	.05	216
Skunk	157	7.00	1,099		.01	2
Squirrel	58,731	1.70	99,843	1.8%	.02	1,175
Wolf, Timber	434	132.00	57,288	1.0%	.25	109
Wolverine	128	190.50	24,384	.4%	.75	96
TOTAL			\$5,564,491			\$67,159

B. Reptile Harvesting

Approximately 35,500 garter snakes were collected by commercial pickers under 14 "individual" permits and 12 "family" permits. This represents an increase from 30,000 snakes collected the previous year. The total 1981 harvest was sold to two licenced Manitoba dealers who exported the snakes to the United States.

Wildlife Education

Through the wildlife education program, a record number of Manitobans were acquainted with the values and attributes of the wildlife resource.

The Oak Hammock Marsh nature tour program continued to grow in popularity as shown by the 3515 visitors who were given a guided tour of the Wildlife Management Area (WMA) from mid-May to mid-October, 1981. Throughout the year an estimated 30,000 Manitobans and tourists visited the 3642 hectare wetland and upland complex, now recognized as one of the top birdwatching and waterfowl hunting areas in North America.

With the ever-increasing demand for tours of Oak Hammock Marsh WMA a proposal was written calling for the development of nature

interpretation facilities and road access improvements.

Home to some 254 species of birds, the area's natural significance and its wide appeal to Manitobans resulted in the publication of Ken Gardner's book "Birds of Oak Hammock Marsh Wildlife Management Area." Produced with the assistance of the Department of Natural Resources, the 172 page publication, complete with over 40 color photographs, represents one of the most comprehensive pre-restoration to post-restoration record of any large marsh in North America. The book is being offered for sale through various outlets.

Staff also took several groups of school children and adults on organized tours of Souris River Bend and Mantagao Lake WMA's.

Once again the Wildlife Branch joined forces with the Manitoba Wildlife Federation in promoting National Wildlife Week. As part of the week's activities, teachers in grades one to eight received education kits (10,000 English and 300 French) and were encouraged to involve students in a poster contest. The contest, open to students in grades three to seven, drew over 1500 entries. Coupled with displays set up at the Winnipeg Sportsmen's Show and 30-second public service announcements broadcast over radio and television, the poster

contest went a long way in enhancing public awareness of the value of wildlife.

In total, wildlife displays reached a potential audience of 34,000 Manitobans in 1981/82. The Festival du Voyageur Trappers Cabin, alone, (a cooperative effort between the Wildlife Branch and the Manitoba Registered Trappers Association) attracted 11,000 visitors.

As in past years, messages were broadcast over Manitoba's major radio stations during the hunting season to encourage safe and ethical hunter behaviour. The Wildlife Branch continued to assist the Manitoba Wildlife Federation in distributing Operation Respect signs to private landowners.

Branch staff worked closely with Parks Branch and Regional Services in alerting vacationers to the dangers of feeding or harassing black bears. Towards that end the publication "Bears, Outdoors and You" was rewritten and a "Do Not Feed the Bears" sign was produced. Wildlife staff also wrote the text for the newly printed brochure "Alf Hole Management Plan."

Wildlife education grants totalling \$4000 were provided to the magazine "Manitoba Nature" and the Delta Waterfowl Research Station.

Branch staff continued to meet with the executive and members of the Manitoba Wildlife Federation and the Manitoba Naturalists Society to discuss issues of mutual concern.

Wildlife Management

A variety of habitat improvement projects were initiated in many of the province's 48 wildlife management areas (WMA's). Under the deer habitat program, forage crops were planted on some 49 hectares through several WMA's. Funded by an impost on deer hunting licences, the program also served to supplement natural food sources with 80 tonnes of deer pellets. When used in prime deer range in Agro-Manitoba the program of pelleted rations and feeders better enables core populations of deer to survive harsh winter conditions.

With ever-increasing demands being placed on white-tailed deer habitat, the Branch enlisted the services of the Manitoba Remote Sensing Centre in using Landsat imagery to map deer habitat in south-central Manitoba.

An additional 130 hectares of Crown land was brought under wildlife management area status in 1981/82. Formerly part of the Narcisse Community Pasture, this land was transferred to the Narcisse WMA because it contains the winter dens for red-sided garter snakes. These snake dens have been intensively studied by scientists in the past and are visited extensively by naturalists during the spring and fall.

A new regulation was passed under The Wildlife Act in 1981/82 authorizing the Department to directly control access to and uses within WMA's. As a result the Wildlife Branch will begin to administer all agricultural dispositions within the WMA's beginning in 1983.

Investigations continued into private land wildlife habitat maintenance programs. Several alternatives were explored including land leases, acquisition and tax rebates to landowners with natural cover on their lands. Simultaneously, a user-pay concept was explored to help fund possible programs on private lands. As a result, the sale of a habitat stamp is being considered to generate a portion of the necessary funds. The stamp would be a compulsory acquisition by all hunters and would also be available for purchase by all non-consumptive users including philatelists.

During 1981, meetings were held with five individual game and fish associations to discuss habitat management projects that association members may wish to initiate.

Activities within the Delta Marsh project area included the design and construction of a new control structure in the Delta Channel and dredging of the channel from Cadham Bay to Lake Manitoba. Final cleanup work and aesthetic improvements will be conducted in 1982/83. Seeding to improve nesting cover was carried out on 57 hectares of Crown land with much of it ultimately being made available for haying.

A development proposal for the Netley Marsh was completed, culminating three years of comprehensive, multi-disciplinary study. The proposal's recommendations are aimed at rehabilitating the marsh to increase wildlife production while reflecting the interests of other resource users as well.

In 1981, 10 Ducks Unlimited Canada projects involving 3237 hectares of Crown land were reviewed and approved by the Wildlife Branch. Since 1976, a total of 41 such projects involving Crown land have been approved by the Province. Ducks Unlimited proposals for large marsh development at Delta Marsh and the Saskeram Wildlife Management Area have been received this past year and are under review by the Wildlife Branch and other department branches. Advisory committees have been appointed for the Summerberry and Saskeram Marsh projects.

Through representation to the Resource Allocation Working Group, the Wildlife Branch provided land use planning inputs to 16 planning districts in the form of background reports and zoning recommendations. Branch representation to the Crown Land Classification

Committee continued during 1981/82. Land trades also continued in four areas of southern Manitoba with the intent of realigning the Crown wildlife land base to optimize land use.

Negotiations continued with four local government districts (LGD's) (Alonsa, Armstrong, Grahamdale and Fisher) to acquire, through trade for unencumbered Crown land, the majority of more than 21,000 hectares of LGD land located in 13 wildlife management areas. The balance of the LGD land is to be returned directly to the appropriate LGD.

A management plan was completed for the 1.7 million hectare Cape Churchill WMA located east of the town of Churchill. The plan which includes land use zoning to protect habitat utilized by polar bears, geese and caribou has been distributed for internal and public comment and is currently undergoing its final writing. Measures were also taken in 1981 to set aside a special conservation area in the vicinity of Churchill to protect nesting Ross' gulls. With the designation of this area in spring 1982, the first of its kind in Manitoba, birdwatchers and photographers will be prohibited from coming within 100 metres of the nesting gulls. A native of Siberia and rare visitor to Canada, the Ross' gull is first known to have nested in the Churchill area during 1980. Low nesting success in 1980 and 1981 is attributed to excessive disturbances by bird-watchers, including in one instance the theft of a nest and clutch of eggs.

A study of the existing trails in the Cape Churchill WMA was carried out. Branch staff were assisted by Dr. L. Dyke of the Land Services Division, Geologic Surveys of Canada, who has been studying the impact of all-terrain vehicles on tundra vegetation in the Keewatin District, Northwest Territories, for three years. The damage to the tundra as a result of these vehicles would not appear to be as serious as first expected and in the majority of cases will not be long-lasting.

Biological Services

In 1981/82, significant advances were made in the management of endangered wildlife. With the completion of plans to introduce four peregrine falcons into Winnipeg skies, Manitoba entered the mainstream of an international effort to re-establish this species. Based on the success of the 1982 program, the Branch hopes to be able to continue its work with the Province of Alberta and the Canadian Wildlife Service in bringing back a healthy wild population of peregrine falcons.

Measures were also taken to study the distribution and population of burrowing owls in

southern Manitoba. Sponsored by the Wildlife Branch and the World Wildlife Fund of Canada, the study is aimed at determining the status of this endangered species.

Throughout the year wildlife research staff conducted a number of studies to facilitate the management of specific species of wildlife. Approximately 1500 Canada geese were banded on their breeding grounds along the Hudson Bay coast and some 12,000 ducks were banded at six locations to obtain information on the 1981 waterfowl harvest. Reward bands were placed on mallards at selected banding stations to assist the Canadian Wildlife Service in evaluating the waterfowl harvest. Research staff continued to take part in spring waterfowl counts and nesting surveys in cooperation with the Canadian Wildlife Service and the United States Fish and Wildlife Service. Staff observed a significant decrease in duck nesting effort at Oak Hammock Marsh and Delta Marsh. They also noted that areas hayed in 1980 under the emergency hay leases produced no nests in spring of 1981.

Field studies of the Shilo-Spruce Woods elk herd revealed the locations of three calving grounds within the military reserves, all of which were close to the tank training zone. Staff continued to monitor the movements of radio-collared elk within the area.

Staff found that by placing swarflex reflectors along Grant Avenue and Roblin Boulevard in Winnipeg the number of deer-vehicle collisions was markedly reduced. Based on these results, plans were made with the Department of Highways to erect more of the reflectors along stretches of highways in southern Manitoba having a high frequency of such accidents.

Computer models to simulate deer, moose and wood bison populations were developed and used for demonstration at meetings with native bands, wildlife associations and conservation officers. Statistical consultation and design of questionnaires greatly enhanced the quality of the biological data base. A computer program was also used to evaluate the effectiveness of the 1981 special spring muskrat trapping season in Netley Marsh; a controlled fall season was implemented based on the analysis of spring season information.

A detailed assessment of the long-term vegetational changes at six level ditching sites in the Interlake showed that marsh blasting with explosives can be used to improve furbearer habitat conditions, especially for muskrats.

Elk surveys in the Interlake, Spruce Woods-Shilo and Duck Mountain areas revealed that the herds were stable and relatively unchanged

from 1980. Moose populations on the other hand remained low in many areas of Manitoba. An intensive aerial survey of the moose population in Game Hunting Area 16 confirmed that the population was extremely low and that special management measures would be required to enhance the supply for all resource users. Caribou numbers in the Churchill WMA remained stable while only a handful of caribou from the Beverly herd and several thousand from the Kaministiquia herd overwintered in northern Manitoba. White-tailed deer surveys were not flown in 1981/82 because of the healthy condition of Manitoba's deer herd and recent advances made in the use of computer programs to predict population trends and numbers.

Background information on the potential effects of aluminum smelters, potash mining, and river diversions on wildlife was assembled and reviewed. A summary report was prepared on the effects of endrin on waterfowl and the potential effects of hunters consuming contaminated ducks.

The relative abundance of leopard frogs was determined at Netley Marsh, Twin Lakes, North, East and West Shoal Lakes, Dog Lake, Turtle Mountain, Amaranth and Oak Point. The populations remain extremely low except at the latter two sites where increases were noted. There was no change in the 1981 garter snake harvest season.

Wildlife research grants totalling \$12,000 were awarded to the Department of Zoology and The Natural Resources Institute at the University of Manitoba in support of studies on pelicans, elk, landowner attitudes toward shelterbelts and the feasibility of wildlife ranching. Support was also provided for studies of moose habitat requirements on Hecla Island and the distribution of hognose snakes and prairie skinks. Graduate student theses on elk movements at Canadian Forces Base Shilo, black bear ecology in the Duck Mountains and an evaluation of big game habitat in the Duck Mountains were received.

Seventeen scientific permits were issued for studies on polar bears, garter snakes, pelicans, muskrats, woodland caribou, mink, ptarmigan and arctic fox.

Big Game

A) White-tailed Deer

Manitoba's deer population continued to increase in 1981, and a record number of hunters participated in the fall hunt. Licence sales for the firearm season totalled 47,500. Overall hunter success remained the same as in 1980 at 59%, representing a harvest of 27,200 deer. This compares with 25,000 deer taken by 43,000 hunters in 1980 and 10,400 deer taken by 30,000 hunters during a "bucks only" season in 1979.

Within the firearm season hunters purchased a licence for either the northern deer unit, the southern deer unit (date choice 1) or the southern deer unit (date choice 2). The 1981 bag limit was "bucks only" in the Pembina River valley (Game Hunting Area 31A), and "any deer" in the remaining areas.

As in previous years the bowhunting season and a muzzle-loading firearm season preceded the regular firearm season. Bowhunting continued to grow in popularity with licence sales increasing by 17% over 1980.

B) Moose

Manitoba's moose population remained at a generally low level throughout most of the province in 1981. A decrease in productivity and an increase in harvest for domestic use was reflected in a reduction in bag limits and licence quotas for several areas. As reflected in statistics presented in the Regional Services Branch section of this report, it is probable that illegal kill aggravated the situation. (See the table summarizing the most common violations under The Wildlife Act.)

As in past years licence quotas were used in areas where the demand for moose hunting exceeded the available resource. In these cases a predetermined number of licences was issued through a special draw. In 1981, "special" licence quotas were reduced for three of the draw areas; Duck Mountain, Hecla Island and southeastern Manitoba.

In areas where it was not necessary to issue licences through a draw, "general" licences were available for purchase from regular vendor outlets. As in 1980, the 1981 general moose season bag limit was "bulls only" in most game hunting areas. General moose licence sales for 1981 totalled 7429 for a drop of 331 licences over 1980.

In several areas, moose populations have begun to show a recovery, and seasons were adjusted accordingly:

- 1) Game Hunting Area (GHA) 9 — Winter season bag limit was increased to "any moose".
- 2) GHA 17A — Fall hunting season was re-established after being closed since 1970.
- 3) GHA 12 and 14 — Surveys indicated that the areas could support a limited harvest of cows and calves. Fifty special licences were awarded for each area, entitling the licensee to bag any moose during an otherwise bulls-only season.
- 4) GHA 13 and 13A — The licence quota which had been reduced to 100 licences in 1980 following a major forest fire was returned to 200 licences.

C) Elk

Elk hunting once again proved to be popular among members of Manitoba's big game hunting fraternity, with licence applications far exceeding the number of available licences. Because of this, elk licences were again issued through a draw on a two licence/one tag system (2250/1125).

Declining bull elk populations in the Duck Mountain and Spruce Woods areas were responsible for season changes in both of these areas. In the Duck Mountains (GHA's 18/18A/18B) the fall season licence quota was reduced by 200 licences. In Spruce Woods (GHA 30) the fall "bulls only" season was cancelled, and the winter season bag limit reduced. Although the number of mature bull elk in the Spruce Woods area declined, the overall herd population increased. In order to protect the mature bulls and continue to offer hunting in the area, the winter season bag limit was set at cows and calves only. Hunter success in this season resulted in the harvest of 37 cows and 9 calf elk, representing a success rate of 90%. It is not surprising that applications for the Spruce Woods area exceeded available licences by almost 13 to 1.

The elk season in GHA's 13 and 13A, cancelled in 1980 due to forest fires, remained closed in 1981.

Landowner elk seasons continued to grow in popularity. Licence sales for GHA 30 remained approximately the same (60), and a new landowner season was instituted around the periphery of Riding Mountain National Park.

D) Woodland Caribou

Beginning in 1981, woodland caribou hunting licences were sold over the counter for all game hunting areas. As long as populations remain stable and the demand for licences remains low, it is expected that licences can be sold through vendors.

Hunting season dates remained unchanged in all areas except GHA 2, where the season was shortened by two weeks to ensure that caribou hunters did not encounter female polar bears emerging from their dens.

E) Black Bear

In response to high black bear populations and an increase in black bear damage to private property and crops, the fall 1981 black bear season in GHA's 1 through to 11 opened one week earlier and closed five weeks later than in 1980. It opened three weeks earlier and closed three weeks later in all remaining areas.

The longer season provided additional hunting opportunity with resident licence sales increasing by 52% over 1980. The liberalized season also allowed hunters to take bears when they are damaging beehives and cereal crops.

F) Timber Wolves

Gray (timber) wolves were added to the list of big game animals with the proclamation of the new Wildlife Act in 1980. The 1981/82 timber wolf season dates remained unchanged from the 1980/81 season dates. The season opened November 2, 1981 and closed March 31, 1982 throughout most of the province. In the Porcupine Provincial Forest, Duck Mountain Provincial Park, Nopiming Provincial Park and Whiteshell Provincial Park, the season closed on December 12 to prevent conflicts between the timber wolf hunters, registered trappers and recreationists.

Any person holding a resident big game licence between August 15, 1981 and March 31, 1982 was entitled to harvest timber wolves for that season.

Game Birds

Senior citizens were permitted, for the first time, to hunt upland game birds in 1981 without obtaining a licence, provided that they carried proof of age while in the field. Prior to 1981, it had been necessary to obtain a free game bird licence from a licence vendor before going into the field.

Upland game bird populations remained stable in 1981. Bag limits and season dates remained unchanged except in GHA's 1 and 2 where the ptarmigan season closed two weeks earlier to avoid confrontations between hunters and polar bears.

Wild turkey hunting continued to be popular in 1981. The success of the La Rivière managed turkey hunting area prompted the province to expand wild turkey hunting to a second managed hunting area near St. Malo, Manitoba. Hunter success in both of these areas was approximately 25%, slightly higher than in the 1980 season at the La Rivière hunting area.

Waterfowl seasons remained unchanged except in GHA 29A where goose hunting was restricted to mornings only for part of the season, and in Migratory Game Bird Zone W1 where the waterfowl season was lengthened by one week.

The hot, dry summer of 1981 resulted in major outbreaks of botulism in several parts of the province; however, the outbreak was under control in time for the fall waterfowl hunting season.

Approximately 47,600 hunters took part in the waterfowl and upland game bird seasons during 1981. This represented roughly 660 fewer hunters over the previous year's seasons.

Hunting Licence Sales and Revenue, 1972/73 to 1981/82

Year	GAME BIRD AND WILD TURKEY		BIG GAME AND BLACK BEAR		WILDLIFE CERTIFICATES		TOTAL LICENCES & CERTIFICATES	
	Licences Sold	Revenue	Licences Sold	Revenue	Licences Sold	Revenue	Licences Sold	Revenue
1972 73	48,134	\$182,956.25	54,791	\$625,507.25	71,111	\$143,322.00	174,036	\$951,785.50
1973 74	48,249	184,236.25	55,621	632,166.50	71,766	144,599.00	175,646	961,001.75
1974 75	48,212	156,109.25	11,627	191,346.50	48,605	99,980.25	108,444	447,436.00
1975 76	48,687	281,261.50	11,606	190,692.00	53,998	109,647.25	114,291	581,600.75
1976 77	56,581	367,888.50	13,231	237,423.25	61,494	124,387.25	131,306	729,699.00
1977 78	56,567 ¹	379,400.75	52,381	554,025.50	77,862	157,485.00	186,810	1,090,911.25
1978 79	60,061 ¹	402,525.75	55,822	596,778.75	82,267	165,835.25	198,150	1,165,139.75
1979 80	59,783 ¹	440,639.25	48,250	539,079.50	77,855	157,039.00	185,888	1,136,757.75
1980 81	58,091 ¹	460,939.75	60,505	666,291.25	83,022	167,673.00	201,618	1,294,904.00
1981 82*	56,203 ¹	474,355.50	66,570	713,353.25	83,998	169,719.00	206,771	1,357,427.75

*Subject to reconciliation and audit. ¹Includes wild turkey licences.

HUNTING LICENCES SOLD, 1981/82

	<u>FEE</u>	<u>NUMBER SOLD</u>	<u>REVENUE</u>
<u>GAME BIRD</u>			
Resident of Manitoba	\$ 4.00	47,631	\$ 179,064
Non-Resident (Canadian)	20.00	1,544	30,547
Non-Resident (Alien)	40.00	6,603	262,620
<u>WILD TURKEY</u>			
Resident of Manitoba	5.00	425	2,125
<u>MOOSE</u>			
Resident of Manitoba	16.00	9,167	145,095
Non-Resident (Canadian)	60.00	40	2,400
Non-Resident (Alien)	150.00	305	45,750
<u>ELK</u>			
Resident of Manitoba	20.00	2,833	56,660
<u>WOODLAND CARIBOU</u>			
Resident of Manitoba	20.00	215	4,300
<u>BLACK BEAR</u>			
Resident of Manitoba	5.00	3,612	17,449
Non-Resident (Canadian)	20.00	33	660
Non-Resident (Alien)	40.00	352	14,073
<u>DEER</u>			
Resident of Manitoba	8.50	49,373	407,918
Non-Resident (Canadian)	48.00	334	16,032
Non-Resident (Alien)	60.00	43	2,580
<u>TOTAL LICENCE SALES</u>			
Resident of Manitoba		113,256	812,611
Non-Resident (Canadian)		1,951	49,639
Non-Resident (Alien)		7,303	325,023
TOTAL		122,510	1,187,273
BIG GAME REPLACEMENT	variable	263	436
WILDLIFE CERTIFICATES	2.25	83,998	169,719
		206,771	\$1,357,428

Wildlife Damage Control

A. Predator Control

Private citizens were encouraged to initiate measures to control and reduce predator-caused damage to private property and crops. When predators such as wolves, black bears or polar bears posed a threat to human safety, private property or livestock, department staff initiated control measures. Removal of specific problem animals was the aim of the program; general population reduction was not undertaken unless absolutely necessary.

B Special Beaver Damage Control Program

The high incidence of problem beaver on lands adjacent to Riding Mountain National Park resulted from the overflow of beaver from the park. A special beaver damage control area was designated around the park. The Department hired staff who are experts in the trapping of nuisance beaver and the removal of beaver dams which cause flooding. This program will be funded from November 1, 1981 to October 30, 1984 under a cost-shared Federal/Provincial Beaver Control Program Agreement.

C. Big Game Damage Prevention and Compensation

In an effort to prevent white-tailed deer damage to haystacks a program was continued for the second year which provides a limited number of farmers with materials to construct deer-proof fences around their haystacks. One such fence was constructed in 1981/82. In conjunction with the fencing project, portable feeders containing special pelletized deer rations were used to intercept deer which travel daily from wooded areas to haystack yards.

The Department continued to advise landowners on how to prevent big game animals from damaging agricultural crops. In some instances scaring devices such as propane bangers and cracker shells were loaned to landowners.

Black bear damage to beehives was concentrated once again in the areas adjacent to Duck Mountain Provincial Park. Field staff assisted beekeepers in depredation prone areas by removing problem bears. In 1981/82 the Department actively promoted the use of electric fences to stop bears from venturing into beehive yards. Brochures which provide technical advice on electrical fence design were distributed to beekeepers.

A black bear control area was established on lands adjacent to Duck Mountain Provincial Forest and Riding Mountain National Park in an effort to reduce black bear damage to beehives. Within the designated area residents of Manitoba may hunt black bears from April 1 to November 30, provided that they report each kill to the Department within 10 days.

Compensation payments for big game damage to crops in 1981/82 were as follows:
Deer — 105 claims \$102,915.67
Elk — 12 claims \$14,144.64
Bear — 84 claims \$44,487.01

D. Waterfowl Damage Prevention and Compensation

A cost-shared Federal/Provincial Waterfowl Crop Damage Prevention Program was renewed in March 1982. Under this program, field staff scared waterfowl from private crops and established lure crops on Crown land. They also purchased crops on selected parcels of private land. Prevention expenditures in 1981/82 totalled \$257,768.05.

A Federal/Provincial Waterfowl Crop Damage Compensation Program made payments to producers to cover production costs for crops that were damaged by waterfowl. A total of 252 claims were paid at a cost of \$362,354.76.

E. Polar Bear

The 1981 Polar Bear Control Program extended from September 1 to December 19, for one of the longest seasons since its inception in 1970. During that period department staff received 56 reports of problem bears. This represents a 75% increase over the record low number of calls tallied in 1980, but comes in at half the average number received in the last 11 years. In 1981, three problem bears were trapped and relocated east of Churchill. Six bears were held in a holding facility for the first time with no ill effects. Expected to be fully operational in 1982, the new facility contains a total of 20 cages and is intended to harbour bears safely until they can make their way to the ice on Hudson Bay and beyond.

Polar bears caused an estimated \$2440 in property damage with one bear accounting for \$1900 worth of damage at an airport warehouse.

A total of 10 bears are known to have died along Manitoba's coastline between July 1 and December 31, 1981. Five bears were shot by either department staff or Churchill residents in defense of life or property. Five died from unknown causes.

Wildlife staff continued to assist the Canadian Wildlife Service in tagging and tracking polar bears to determine the productivity of Manitoba's bear population and the fidelity of females to denning areas.